



NASA TM-83270

NASA Technical Memorandum 83270

NASA-TM-83270 19820021349

Scientific and Technical Information Output of the Langley Research Center for Calendar Year 1981

JUNE 1982

LIBRARY COPY

JUN 1 1982

LANGLEY RESEARCH CENTER
LIBRARY, NASA
HAMPTON, VIRGINIA

NASA

NASA Technical Memorandum 83270

**Scientific and Technical Information
Output of the Langley Research Center
for Calendar Year 1981**

Compiled by
Report and Manuscript Control Office,
Research Information and Applications Division
Langley Research Center
Hampton, Virginia



National Aeronautics and
Space Administration

Langley Research Center
Hampton, Virginia 23665

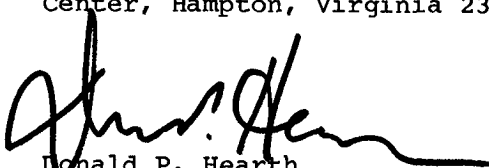
FOREWORD

This report contains a listing of Langley Research Center's scientific and technical research output for calendar year 1981.

The intent of this report is to provide a greater awareness of the broad scope of results and the importance of the research and development work conducted by scientists and engineers at Langley. This current awareness is mandated by the National Aeronautics and Space Act of 1958 which provides for the widest practical dissemination of NASA research. This publication provides researchers and the scientific, industrial, and educational community with a comprehensive state-of-the-art reference document by compiling under one cover all citations and availability of Langley's report and periodical literature, conference papers, national and international meeting papers, computer programs, patents, and other related research published during 1981.

During the calendar year 1981, Langley's contributions to NASA and non-NASA literature included 177 NASA Formal Reports, 127 Quick-Release Technical Memorandums, 242 NASA Contractor Reports, 181 Journal Articles, 349 Meeting/Conference Papers, 20 NASA Computer Programs, 65 "NASA Tech Briefs," 24 Patents, and 221 Oral Presentations to Conferences/Workshops.

Comments or suggestions concerning this publication should be addressed to the Research Information and Applications Division, Mail Stop 180A, NASA Langley Research Center, Hampton, Virginia 23665.



Donald P. Hearsh
Director

INTRODUCTION

The NASA Langley Research Center is one of the Nation's leading laboratories for research and development in the sciences of aeronautics and space technology. Langley conducts basic and applied research in fluid and flight mechanics, flight systems, structures and materials, acoustics and noise reduction, measurements and instrumentation systems, numerical methods and techniques, data systems, electronics, physics, chemistry, and Earth and space sciences.

This publication is a compilation of Langley's scientific and technical research output for 1981 which is processed through the Center's Research Information and Applications Division, an integral part of NASA's Agency-wide Scientific and Technical Information (STI) system. This volume is intended as a reference summary for researchers and as a current awareness publication for the scientific, research, and academic community.

The results of Langley's research are disseminated in a variety of NASA and non-NASA scientific and technical media and information system. Details concerning the availability of the research which is referenced in this document are found in the AVAILABILITY section on page vii.

Citations include NASA Formal Reports (Technical Papers, Technical Memorandums, Conference Publications, and Reference Publications), Quick-Release Technical Memorandums, Contractor Reports, Journal Articles/Periodical Literature, Meeting/Conference Papers, Computer Programs, "NASA Tech Briefs" (a quarterly publication for United States industry and technology transfer agents), Patents, and Oral Presentations to Conferences/Workshops. There is a separate section for citations for NASA Contractor Reports funded by the Army Structures Laboratory (AVRADCOM).

The citations are listed first by Langley Directorates, then by the Langley Office or Division. Citations are listed alphabetically by author under each heading. If a citation has more than one author, it is listed only once under the senior author's name. "NASA Tech Briefs" are listed under the main innovator's name although this is not necessarily the order in which the innovators' names appear on the "NASA Tech Briefs." The subject category used to index the citation, the source of availability, and the Research Technology Objectives and Plans (RTOP, the funding program) numbers are noted at the end of each citation.

Computer programs which are cited in this document have been announced in 1981 issues of "Computer Program Abstracts," an indexing and abstracting journal of selected computer programs developed by NASA, NASA contractors, and other federal agencies.

The "NASA Tech Briefs" articles which are cited have been published in 1981 issues of the "NASA Tech Briefs" journal. Subscriptions to this journal are available through the NASA Technology Utilization Program by writing to the Director, Technology Transfer Division, NASA Scientific and Technical Information Facility, P.O. Box 8757, Baltimore/Washington International Airport, Maryland 21240.

Patents listed which are owned in whole or in part by Langley Research Center personnel have been published in issues of "Scientific and Technical Aerospace Reports" (STAR), a NASA announcement journal for report literature. STAR is available on a subscription basis from the U.S. Government Printing Office (GPO) or to qualified recipients from the NASA Scientific and Technical Information Service (STIF).

The publication of this report required the efforts of many individuals. Special recognition is given to the Scientific and Technical Information Coordinators for ensuring the accuracy of their respective Division or Office submittals and to the Office of Patent Counsel for providing the Patent listings.

AVAILABILITY

Availability sources of the different output categories are given below:

| <u>Category</u> | <u>Source</u> |
|---|--|
| NASA Report Literature: | National Technical Information Service (NTIS) 5285 Port Royal Road Springfield, VA 22161 |
| Formal Reports | |
| Quick-Release Technical Memorandums | NASA Scientific and Technical Information Facility (STIF) P.O. Box 8757 Baltimore/Washington International Airport, MD 21240 |
| Contractor Reports | |
| | NASA Industrial Applications Centers (IAC) (See Appendix for addresses of IAC's) |
| Journal Articles | |
| Conference/Meeting Papers | Consult citation for source of availability |
| Computer Programs | Computer Software Management and Information Center (COSMIC) 112 Barrow Hall University of Georgia Athens, GA 30601 |
| Tech Briefs | Office of Technology Utilization and Applications Programs Mail stop 139A NASA Langley Research Center Hampton, VA 23665 |
| Patents: | |
| Patent Application Specifications | National Technical Information Service (NTIS) |
| Printed Copies | Commissioner of Patents and Trademarks U.S. Patent and Trademark Office Washington, DC 20231 |
| Oral Presentations to Conferences/ Workshops | Consult the Author |

CONTENTS

| | |
|---|-----|
| FOREWORD | iii |
| INTRODUCTION | v |
| AVAILABILITY | vii |
| OFFICE OF THE DIRECTOR | 1 |
| OFFICE OF DIRECTOR FOR PROJECTS | 3 |
| PROJECTS MANAGEMENT SYSTEMS DIVISION | 5 |
| SCOUT PROJECT OFFICE | 7 |
| LONG DURATION EXPOSURE FACILITY PROJECT OFFICE | 9 |
| AIRCRAFT ENERGY EFFICIENCY PROJECT OFFICE | 10 |
| LARGE SPACE SYSTEMS TECHNOLOGY PROGRAM OFFICE | 13 |
| ERBE/SAGE II/HALOE PROJECT OFFICE | 14 |
| OFFICE OF DIRECTOR FOR ELECTRONICS | 15 |
| ANALYSIS AND COMPUTATION DIVISION | 16 |
| FLIGHT DYNAMICS AND CONTROL DIVISION | 20 |
| FLIGHT ELECTRONICS DIVISION | 26 |
| INSTRUMENT RESEARCH DIVISION | 38 |
| TERMINAL CONFIGURED VEHICLE PROGRAM OFFICE | 47 |
| OFFICE OF DIRECTOR FOR STRUCTURES | 48 |
| MATERIALS DIVISION | 49 |
| ACOUSTICS AND NOISE REDUCTION DIVISION | 63 |
| STRUCTURES AND DYNAMICS DIVISION | 72 |
| LOADS AND AEROELASTICITY DIVISION | 83 |
| OFFICE OF DIRECTOR FOR AERONAUTICS | 94 |
| AERONAUTICAL SYSTEMS DIVISION | 95 |
| LOW-SPEED AERODYNAMICS DIVISION | 100 |
| HIGH-SPEED AERODYNAMICS DIVISION | 105 |
| TRANSONIC AERODYNAMICS DIVISION | 116 |
| OFFICE OF DIRECTOR FOR SPACE | 128 |
| ATMOSPHERIC ENVIRONMENTAL SCIENCES DIVISION | 129 |
| SPACE SYSTEMS DIVISION | 140 |
| MARINE AND APPLICATIONS TECHNOLOGY DIVISION | 152 |
| OFFICE OF DIRECTOR FOR SYSTEMS ENGINEERING AND OPERATIONS | 159 |
| FACILITIES PROGRAM DEVELOPMENT OFFICE | 160 |
| FABRICATION DIVISION | 162 |
| SYSTEMS ENGINEERING DIVISION | 164 |
| FACILITIES ENGINEERING DIVISION | 167 |
| OPERATIONS SUPPORT DIVISION | 169 |
| OFFICE OF DIRECTOR FOR MANAGEMENT OPERATIONS | 170 |

| | |
|---|-----|
| ARMY STRUCTURES LABORATORY (AVRADCOM) | 172 |
| APPENDIX | 174 |
| AUTHOR INDEX | 175 |
| SUBJECT CATEGORY INDEX | 205 |
| RTOP LISTING INDEX | 211 |
| TECH BRIEF CATEGORY INDEX | 225 |

NASA LANGLEY RESEARCH CENTER
Hampton, Virginia

CALENDAR YEAR 1981

PUBLICATIONS FOR OFFICE OF THE DIRECTOR

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

1. Anon: Research and Technology - 1981 Annual Report of the Langley Research Center. NASA TM-83221, November 1981, 68 p.
(Avail: NTIS Subject Category 99)

Contractor Reports

2. Spencer, John H. (compiler): Final Report: 1981 Summer Research Fellowship Program. (NAS1-16455 Hampton Institute.) NASA CR-165814, October 1981, 35 p.
(Avail: NTIS Subject Category 80 RTOP 340-00-00)

Journal Articles and Periodical Literature

No journal articles and periodical literature.

Meeting/Conference Papers

3. Heldenfels, Richard R.: Some Historical Perspectives on Thermostructural Research at the NASA Langley Aeronautical Laboratory, 1948-1958. Presented at the Symposium on "Computational Aspects of Heat Transfer in Structures," November 3-5, 1981, Hampton, Virginia.
(Avail: NTIS, NASA CP-2216 (Pending) Subject Category 34
RTOP 506-53-53)

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

Oral Presentations to Conferences/Workshops

4. Houbolt, John: Atmospheric Turbulence and Aircraft Design - The Evolution Over the Years. Presented at the AIAA/ASME/ASCE/AHS 22nd Structures, Structural Dynamics and Materials Conference, April 6-8, 1981, Atlanta, Georgia.

PUBLICATIONS FOR OFFICE OF DIRECTOR FOR PROJECTS

Formal Reports

5. Jones, Kenneth L.; Henshaw, Mary; McMenomy, Christie; Robles, Andres; Scribner, Paul C.; Wall, Stephen D.; and Wilson, Jackson W.: Viking Lander Imaging Investigation During Extended and Continuation Automatic Missions. Volume I - Lander 1 Picture Catalog of Experiment Data Record. NASA RP-1068, June 1981, 654 p.
(Avail: NTIS Subject Category 91 RTOP 505-34-23)
6. Jones, Kenneth L.; Henshaw, Mary; McMenomy, Christie; Robles, Andres; Scribner, Paul C.; Wall, Stephen D.; and Wilson, Jackson W.: Viking Lander Imaging Investigation During Extended and Continuation Automatic Missions. Volume II - Lander 2 Picture Catalog of Experiment Data Record. NASA RP-1068, June 1981, 565 p.
(Avail: NTIS Subject Category 91 RTOP 505-34-23)
7. Lightner, E. Burton (compiler): Structural Dynamics and Control of Large Space Structures. NASA CP-2187, July 1981, 138 p.
(Avail: NTIS Subject Category 15 RTOP 506-54-93)
8. Masursky, Harold; and Crabill, Norman L.: Viking Site Selection and Certification. NASA SP-429, June 1981, 37 p.
(Avail: NTIS Subject Category 91 RTOP 815-00-00)

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

9. Hays, D.: An Assessment of Alternate Thermal Protection Systems for the Space Shuttle Orbiter - Volume 2: Data Transmittal. (NAS1-16302 Rockwell International Corporation.) NASA CR-165790, 1981.
(Avail: STIF (Pending) Subject Category 16 RTOP 936-34-00)

Journal Articles and Periodical Literature

No journal articles and periodical literature.

Meeting/Conference Papers

10. Crumbly, Kenneth H.; and Harris, Jack E.: Atmospheric Lidar Multi-User Instrument - A Spacelab Payload. Presented at the SPIE's Los Angeles Technical Symposium, February 9-13, 1981, North Hollywood, California.
(Avail: SPIE Subject Category 46 RTOP 146-60-03)

Computer Programs

No computer programs.

Tech Briefs

11. Kenigsberg, Irwin; and Madden, John F. (United Technologies Corporation):
Isolation and Measurement of Rotor Vibration Forces. NASA Tech Brief
LAR-12476. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)

Patents

No patents.

Oral Presentations to Conferences/Workshops

12. Wright, Howard T.: Future of Aeronautics and Space. Presented at the American
Society of Military Comptrollers Meeting, December 9, 1981, Hampton, Virginia.

PUBLICATIONS FOR PROJECTS MANAGEMENT SYSTEMS DIVISION

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

13. Sibbers, Charles W.: Guidelines for Cost Control and Analysis of Cost-Type Research and Development Contracts. NASA TM-83108, May 1981, 69 p.
(Avail: NTIS Subject Category 81 RTOP 992-02-00)

Contractor Reports

No contractor reports.

Journal Articles and Periodical Literature

No journal articles and periodical literature.

Meeting/Conference Papers

14. Dilts, Doug; and Moore, Frederick L.: Using PRICE to Estimate Cost of Future Large Space Structures. Presented at the 1981 International Parametrics Conference, May 4-7, 1981, San Diego, California.
(Avail: ISPA, Proceedings Subject Category 83 RTOP 506-62-43)
15. Wood, Darrell A.; and Moore, Frederick L.: Automated Program Planning Tool Utilizing CER's. Presented at the 1981 International Parametrics Conference, May 4-7, 1981, San Diego, California.
(Avail: ISPA, Proceedings Subject Category 83 RTOP 506-62-43)

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

Oral Presentations to Conferences/Workshops

No oral presentations to conferences/workshops.

PUBLICATIONS FOR SCOUT PROJECT OFFICE

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

16. Myler, T. R.: Moments of Inclination Error Distribution Computer Program. (NAS1-15000 Vought Corporation.) NASA CR-165824, December 1981, 50 p.
(Avail: IAC Subject Category 61 RTOP 490-02-02)
17. Myler, T. R.: NEMAR Plotting Computer Program. (NAS1-15000 Vought Corporation.) NASA CR-165831, December 1981, 66 p.
(Avail: IAC Subject Category 61 RTOP 490-02-02)
18. Myler, T. R.: Elliptical Orbit Performance Computer Program. (NAS1-15000 Vought Corporation.) NASA CR-165832, December 1981, 55 p.
(Avail: IAC Subject Category 61 RTOP 490-02-02)

Journal Articles and Periodical Literature

No journal articles and periodical literature.

Meeting/Conference Papers

19. Foster, Lee R., Jr.; and Urash, Richard G.: The Scout Launch Vehicle Program. Presented at the Eighteenth Space Congress, April 29-May 1, 1981, Kennedy Space Center, Florida.
(Avail: Kennedy Space Flight Center, Proceedings Subject Category 15 RTOP 490-00-23)

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

Oral Presentations to Conference/Workshops

No oral presentations to conference/workshops.

PUBLICATIONS FOR LONG DURATION EXPOSURE FACILITY PROJECT OFFICE

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Periodical Literature

No journal articles and periodical literature.

Meeting/Conference Papers

No meeting/conference papers.

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

Oral Presentations to Conferences/Workshops

20. Clark, Lenwood G.: STS-1 and Beyond. Presented at the Peninsula Chapter of the Virginia Society of Professional Engineers, May 21, 1981, Hampton, Virginia.

PUBLICATIONS FOR AIRCRAFT ENERGY EFFICIENCY PROJECT OFFICE

Formal Reports

21. Anon: Advanced Aerodynamics and Active Controls - Selected NASA Research. NASA CP-2172, February 1981, 185 p.
(Avail: NTIS Subject Category 01 RTOP 534-02-13)
22. Anon: Advanced Aerodynamics - Selected NASA Research. NASA CP-2208, December 1981, 99 p.
(Avail: IAC Subject Category 01 RTOP 534-02-13)

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

23. Chovil, D. V.; Desper, O. E.; Harvey, S. T.; Jamison, E. S.; McCarty, J. E.; and Syder, H.: Advanced Composite Elevator for Boeing 727 Aircraft, Volume I - Technical Summary. (NAS1-14952 Boeing Commercial Airplane Company.) NASA CR-3290, November 1981, 93 p.
(Avail: IAC Subject Category 05 RTOP 534-03-13)
24. Dunning, E. G.; Cobbs, W. L.; and Legg, R. L.: Advanced Composite Aileron for L-1011 Transport Aircraft - Aileron Manufacture. (NAS1-15069 Lockheed-California Company; Subcontractor - AVCO Corporation.) NASA CR-165718, June 1981, 61 p.
(Avail: IAC Subject Category 24 RTOP 534-03-13)
25. Griffin, C. F.: Advanced Composite Aileron for L-1011 Transport Aircraft - Ground Tests and Flight Evaluation. (NAS1-15069 Lockheed-California Company.) NASA CR-165664, February 1981, 40 p.
(Avail: IAC Subject Category 24 RTOP 534-03-13)
26. Griffin, C. F.; Fogg, L. D.; and Dunning, E. G.: Advanced Composite Aileron for L-1011 Transport Aircraft - Design and Analysis. (NAS1-15069 Lockheed-California Company.) NASA CR-165635, March 1981, 172 p.
(Avail: IAC Subject Category 24 RTOP 534-03-13)
27. Jackson, A. C.; Crocker, J. F.; Ekvall, J. C.; Eudaily, R. R.; Mosesian, B.; Van Cleave, R. R.; and Hamersveld, J. Van: Advanced Manufacturing Development of a Composite Empennage Component for L-1011 Aircraft, Phase II - Final Report Design and Analysis. (NAS1-14000 Lockheed-California Company.) NASA CR-165634, April 1981, 215 p.
(Avail: IAC Subject Category 24 RTOP 534-03-13)
28. Staff of Boeing Commercial Airplane Company: Integrated Application of Active Controls (IAAC) Technology to an Advanced Subsonic Transport - Project Plan. (NAS1-14742 and NAS1-15325 Boeing Commercial Airplane Company.) NASA CR-3305, February 1981, 42 p.
(Avail: NTIS Subject Category 05 RTOP 534-02-13)

29. Staff of Boeing Commercial Airplane Company: Integrated Application of Active Controls (IAAC) Technology to an Advanced Subsonic Transport Project - Wing Planform Study and Final Configuration Selection. (NAS1-15325 Boeing Commercial Airplane Company.) NASA CR-165630, June 1981, 350 p.
(Avail: IAC Subject Category 05 RTOP 534-02-13)
30. Staff of Boeing Commercial Airplane Company: Flight Test Evaluation of Drag Effects on Surface Coatings on the NASA Boeing 737 TCV Airplane. (NAS1-15325 Boeing Commercial Airplane Company.) NASA CR-165767, June 1981, 98 p.
(Avail: IAC Subject Category 05 RTOP 534-02-13)
31. Staff of Boeing Commercial Airplane Company: Integrated Application of Active Controls (IAAC) Technology to an Advanced Subsonic Transport Project - Current and Advanced ACT Control System Definition Study - Volume I. (NAS1-14742 and NAS1-15325 Boeing Commercial Airplane Company.) NASA CR-165631, October 1981, 466 p.
(Avail: IAC Subject Category 05 RTOP 534-02-13)
32. Staff of Boeing Commercial Airplane Company: Integrated Application of Active Controls (IAAC) Technology to an Advanced Subsonic Transport Project - Current and Advanced ACT Control System Definition Study - Volume II, Appendices. (NAS1-14742 and NAS1-15325 Boeing Commercial Airplane Company.) NASA CR-165631, October 1981, 510 p.
(Avail: IAC Subject Category 05 RTOP 534-02-13)
33. Staff of Boeing Commercial Airplane Company: Integrated Application of Active Controls (IAAC) Technology to an Advanced Subsonic Transport Project - Wing Planform Study and Final Configuration Selection - Summary Report. (NAS1-15325 Boeing Commercial Airplane Company.) NASA CR-3468, October 1981, 43 p.
(Avail: IAC Subject Category 05 RTOP 534-02-13)
34. Staff of Douglas Aircraft Company: Selected Advanced Aerodynamic and Active Control Concepts Development - Summary Report. (NAS1-14744 McDonnell Douglas Corporation.) NASA CR-3469, October 1981, 78 p.
(Avail: IAC Subject Category 02 RTOP 534-02-13)
35. Staff of Douglas Aircraft Company: Experimental Investigation of Elastic Mode Control on a Model of a Transport Aircraft. (NAS1-15327 McDonnell Douglas Corporation.) NASA CR-3472, November 1981, 214 p.
(Avail: IAC Subject Category 05 RTOP 534-02-13)

Journal Articles and Periodical Literature

No journal articles and periodical literature.

Meeting/Conference Papers

36. Adams, William M., Jr.; and Tiffany, Sherwood H.: Central Law Design To Meet Constraints Using SYNPAK--Synthesis Package for Active Controls. Presented at the AIChE/ASME/IEEE/ISA/AIAA 1981 Joint Automatic Control Conference, June 17-19, 1981, Charlottesville, Virginia.
(Avail: NTIS, NASA TM-83264 Subject Category 39 RTOP 505-34-33)

37. Kreitinger, Richard L.; and Middleton, David B.: Aircraft Surface Coatings for Drag Reduction/Erosion Protection. Presented at the 1981 SAE Aerospace Congress and Exposition, October 5-8, 1981, Anaheim, California. Paper No. 811070.
(Avail: SAE Inc. Subject Category 05 RTOP 534-02-13)

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

Oral Presentations to Conferences/Workshops

38. Hood, Ray V.: Status of Aircraft Energy Efficiency Active Controls Technology Program. Presented at the AIChE/ASME/IEEE/ISA/AIAA 1981 Joint Automatic Control Conference, June 17-19, 1981, Charlottesville, Virginia.
39. Leybold, H. A.; and Chapman, A. J.: Manufacturing Experience with ACEE Composites Structures for Commercial Transports. Presented to the MTAG Nonmetals/Composites Program Review, Orlando, Florida, February 23-25, 1981.

PUBLICATIONS FOR LARGE SPACE SYSTEMS TECHNOLOGY PROGRAM OFFICE

Formal Reports

40. Koprivier, Frank, III (compiler): Large Space Systems Technology - 1980.
Volume I - Systems Technology. NASA CP-2168, February 1981, 460 p.
(Avail: NTIS Subject Category 15 RTOP 506-62-43)
41. Koprivier, Frank, III (compiler): Large Space Systems Technology - 1980.
Volume II - Base Technology. NASA CP-2168, February 1981, 196 p.
(Avail: NTIS Subject Category 15 RTOP 506-62-43)

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Periodical Literature

No journal articles and periodical literature.

Meeting/Conference Papers

42. Russell, R. A.: Antenna Program Introduction. Presented at the Third Annual Large Space Systems Technology Review, November 16-19, 1981, Hampton, Virginia.
(Avail: NTIS, NASA CP-2215 Subject Category 24 RTOP 506-62-43)

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

Oral Presentations to Conferences/Workshops

No oral presentations to conferences/workshops.

PUBLICATIONS FOR ERBE/SAGE II/HALOE PROJECT OFFICE

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Periodical Literature

No journal articles and periodical literature.

Meeting/Conference Papers

No meeting/conference papers.

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

Oral Presentations to Conferences/Workshops

No oral presentations to conferences/workshops.

PUBLICATIONS FOR OFFICE OF DIRECTOR FOR ELECTRONICS

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Periodical Literature

No journal articles and periodical literature.

Meeting/Conference Papers

No meeting/conference papers.

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

Oral Presentations to Conferences/Workshops

No oral presentations to conferences/workshops.

PUBLICATIONS FOR ANALYSIS AND COMPUTATION DIVISION

Formal Reports

43. Anon: Numerical Grid Generation Techniques. NASA CP-2166, January 1981, 574 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
44. Nolan, Joseph D.: Design and Implementation of a Telecommunication Interface for the TAATM/TCV Real-Time Experiment. NASA TM-83231, December 1981, 24 p.
(Avail: NTIS Subject Category 04 RTOP 992-16-05)

Quick-Release Technical Memorandums

45. Houck, Jacob A.: A Pilot Training Manual for the Terminal Configured Vehicle Electronic Horizontal Situation Indicator. NASA TM-81959, March 1981, 63 p.
(Avail: NTIS Subject Category 03 RTOP 534-04-13)
46. Kibler, Kemper S.; and McDaniel, Gary A.: Application of a Local Linearization Technique for the Solution of a System for Stiff Differential Equations Associated With the Simulation of a Magnetic Bearing Assembly. NASA TM-83146, September 1981, 37 p.
(Avail: NTIS Subject Category 61 RTOP 506-61-43)
47. Markos, Athena T.: A Learning Guide for the Terminal Configured Vehicle Electronic Horizontal Situation Indicator. NASA TM-83128, June 1981, 35 p.
(Avail: NTIS Subject Category 03 RTOP 534-04-13)
48. Noland, Marie S.: An Evaluation of the Interactive Software Invocation System (ISIS) for Software Development Applications. NASA TM-81924, January 1981, 29 p.
(Avail: NTIS Subject Category 61 RTOP 506-61-43)
49. Smith, Kathryn A.: Requirements and Preliminary Design for a General Purpose Real-Time Executive for Flight Computers. NASA TM-83167, June 1981, 20 p.
(Avail: NTIS Subject Category 61 RTOP 506-61-43)
50. Smith, R. E.: Two-Boundary Grid Generation for the Solution of the Three-Dimensional Compressible Navier-Stokes Equations. NASA TM-83123, May 1981, 172 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)

Contractor Reports

51. Anderson, Mark A.; and Callahan, Ron: Learning Guide for the Terminal Configured Vehicle Advanced Guidance and Control System Mode Select Panel. (NAS1-15673 Control Data Corporation.) NASA CR-165751, July 1981, 19 p.
(Avail: NTIS Subject Category 03 RTOP 534-04-13)
52. Gridley, Doreen: An Introduction to Time Series Analysis and Data Reduction Programming Capabilities. (NAS1-15400 System Development Corporation.) NASA CR-165782, June 1981, 78 p.
(Avail: STIF Subject Category 65 RTOP 992-16-04)

53. Myers, Raymond H.: Methods for Presentation and Display of Multivariate Data. (L-72497A Raymond H. Myers.) NASA CR-165788, September 1981, 17 p.
(Avail: NTIS Subject Category 65 RTOP 505-35-33)
54. Myers, Raymond H.: Applications of Non-Parametric Statistics and Analysis of Variance on Sample Variances. (L-72497A Raymond H. Myers.) NASA CR-165789, September 1981, 97 p.
(Avail: NTIS Subject Category 65 RTOP 505-35-33)
55. Shah, Shantilal N.: STAR Adaptation of QR Algorithm. (NCC1-7 Hampton Institute.) NASA CR-165730, June 1981, 28 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
56. Shah, Shantilal N.: STAR Adaptation of QR Algorithm for Overdetermined Linear Systems With Complex Coefficients. (NCC1-7 Hampton Institute.) NASA CR-165731, June 1981, 25 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)

Journal Articles and Periodical Literature

No journal articles and periodical literature.

Meeting/Conference Papers

57. Knight, John C.; and Dunlop, Douglas D.: Measurements of an Optimizing Compiler for a Vector Computer. Presented at the IEEE Computer Society 1981 International Conference on Parallel Processing, August 25-28, 1981, Bellair, Michigan.
(Avail: IEEE Subject Category 61 RTOP 505-31-83)
58. Smith, R. E.; and Speray, D. E.: Color Visualization for Fluid Flow Prediction. Presented at the ASME Winter Annual Meeting, November 15-20, 1981, Washington, D.C.
(Avail: ASME Subject Category 64 RTOP 505-31-83)
59. Steinmetz, G. G.; Person, L. H.; and Morello, S. A.: Have We Overlooked the Pilot's Role in an Automated Flight Deck? Presented at the AIAA/IEEE 4th Digital Avionics Systems Conference, November 17-19, 1981, St. Louis, Missouri. AIAA Paper No. 81-2262.
(Avail: AIAA Subject Category 06 RTOP 534-04-13)

Computer Programs

60. Higher Order Software, Inc.: Flowcharter: A Universal Structured Design Diagrammer. Program No. LAR-12548. NASA Accession No. M80-10062. Released 1981.
(Avail: COSMIC Subject Category 61)
61. Smith, Rudeen S.; and Noland, Marie S.: Interpretive Computer Simulator for the NASA Standard Spacecraft Computer-II. Program No. LAR-12603. NASA Accession No. M80-10045. Released 1981.
(Avail: COSMIC Subject Category 19)

Tech Briefs

62. Higher Order Software, Inc.: A Universal Structural-Design Diagrammer. NASA Tech Brief LAR-12548. Released 1981.
(Avail: NASA Langley Technology Utilization Office
Category: Mathematics and Information Sciences)
63. Tulppo, John S. (Sperry Rand Corp.): Graphics-System Color-Coded Interface. NASA Tech Brief LAR-12646. Released 1981.
(Avail: NASA Langley Technology Utilization Office
Category: Electronic Components and Circuits)

Patents

64. Ashworth, Billy R.; Hall, Alton C.; and Clark, Clyde E.: Helmet Wright Simulator. U.S. Patent 4,264,310. Issued 1981.
(Avail: U.S. Patent & Trademark Office Subject Category 54)

Oral Presentations to Conferences/Workshops

65. Bowen, John: PRIME Graphics: A Status Report. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
66. Clemmons, Marvin; and Martin, Mary: Interactive Performance Assessment System. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
67. Craidon, Charlotte: An Expanded Common Arbitrary Geometry Format and Proposed Applications. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
68. Crawford, Daniel J.: Remote Tape Handling Facility. Presented at the NEXUS, Spring Meeting of the Network Systems Corporation Users Group, March 10-12, 1981, San Diego, California.
69. Kahlbaum, Bill: Interactive Configuration Drawing Update Program. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
70. Meissner, Frances: An Interactive Quick Look at the Cutter Location Tape. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
71. Pope, Alan T.: Biofeedback Instrumentation. Presented at the Veterans Administration Meeting on Biofeedback for Physical Therapists, June 24, 1981, Los Angeles, California.
72. Roland, Vince: Digital Image Processing at ACD. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.

73. Schiess, James R.; and Matthews, Christine G.: Analysis and Simulation of Near-Terminal Aircraft Flight Paths. Presented at the 1981 Joint Statistical Meetings of the American Statistical Association and the Biometric Society, August 10-13, 1981, Detroit, Michigan.
74. Shipman, Floyd: Software for Building Engineering Scientific Data Base Systems. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
75. Shipman, Floyd: Overview of Session III: Data Management Systems to Store, Access and Display Data. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
76. Smith, Robert E.: A Grid Spacing Control Technique for Algebraic Grid Generation Methods. Presented at the AIAA 5th Computational Fluid Dynamics Conference, June 22-23, 1981, Palo Alto, California.
77. Speray, Don: A Subroutine Library for Manipulating 3-D Transformations. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
78. Voigt, S. J.: Tools Introduction Experience at NASA Langley Research Center. Presented at the Workshop on Phasing Software Tools, May 18, 1981, Gaithersburg, Maryland.

PUBLICATIONS FOR FLIGHT DYNAMICS AND CONTROL DIVISION

Formal Reports

79. Armstrong, Ernest S.; and Tripp, John S.: An Application of Multivariable Design Techniques to the Control of the National Transonic Facility. NASA TP-1887, August 1981, 32 p.
(Avail: NTIS Subject Category 63 RTOP 505-34-33)
80. Bales, John W.; and Barker, L. Keith: Marking Parts To Aid Robot Vision. NASA TP-1819, April 1981, 33 p.
(Avail: NTIS Subject Category 59 RTOP 506-54-13)
81. Batterson, James G.: Estimation of Airplane Stability and Control Derivatives From Large Amplitude Longitudinal Maneuvers. NASA TM-83185, October 1981, 41 p.
(Avail: NTIS Subject Category 08 RTOP 505-34-33)
82. Dunn, H. J.: A Computer Program for Estimating the Power-Density Spectrum of Advanced Continuous Simulation Language Generated Time Histories. NASA TM-83120, June 1981, 24 p.
(Avail: NTIS Subject Category 61 RTOP 505-34-33)
83. Groom, Nelson J.; and Miller, James B.: A Microprocessor-Based Table Lookup Approach for Magnetic Bearing Linearization. NASA TP-1838, May 1981, 26 p.
(Avail: NTIS Subject Category 33 RTOP 506-54-23)
84. Groom, Nelson J.; Woolley, Charles T.; and Joshi, Suresh M.: Analysis and Simulation of a Magnetic Bearing Suspension System for a Laboratory Model Annular Momentum Control Device. NASA TP-1799, March 1981, 36 p.
(Avail: NTIS Subject Category 31 RTOP 506-54-23)
85. Harris, Randall L., Sr.; and Mixon, Randolph W.: Effects of Curved Approach Paths and Advanced Displays on Pilot Scan Patterns. NASA TP-1846, May 1981, 26 p.
(Avail: NTIS Subject Category 53 RTOP 505-35-23)
86. Heer, Ewald: Automated Decision Making and Problem Solving. Volume I - Executive Summary. NASA CP-2180, August 1981, 55 p.
(Avail: NTIS Subject Category 66 RTOP 506-54-73)
87. Heer, Ewald (editor): Automated Decision Making and Problem Solving. Volume II - Conference Presentations. NASA CP-2180, August 1981, 320 p.
(Avail: NTIS Subject Category 66 RTOP 506-54-73)
88. Hinton, David A.: A General Aviation Simulator Evaluation of a Rate-Enhanced Instrument Landing System Display. NASA TP-1960, December 1981, 42 p.
(Avail: NTIS Subject Category 06 RTOP 505-41-73)
89. Klein, Vladislav; Batterson, James G.; and Murphy, Patrick C.: Determination of Airplane Model Structure From Flight Data by Using Modified Stepwise Regression. NASA TP-1916, October 1981, 46 p.
(Avail: NTIS Subject Category 08 RTOP 505-34-33)

90. Miller, G. Kimball, Jr.: Simulator Evaluation of the Effects of Reduced Spoiler and Thrust Authority on a Decoupled Longitudinal Control System During Landings in Wind Shear. NASA TM-83188, October 1981, 49 p.
(Avail: NTIS Subject Category 08 RTOP 505-34-33)
91. Sarma, Garimella R.; and Adams, James J.: Simulator Evaluation of Separation of Display Parameters in Path-Following Tasks. NASA TP-1915, October 1981, 42 p.
(Avail: NTIS Subject Category 06 RTOP 505-41-73)
92. Sherman, Windsor L.: An Analytical Study of the Longitudinal Response of Airplanes to Positive Wind Shear. NASA TP-1765, March 1981, 51 p.
(Avail: NTIS Subject Category 08 RTOP 505-44-23)
93. Spady, Amos A., Jr.; and Harris, Randall L., Sr.: How a Pilot Looks at Altitude. NASA TM-81967, April 1981, 12 p.
(Avail: NTIS Subject Category 53 RTOP 505-35-23)
94. Waller, Marvin C.; Harris, Randall L., Sr.; and Person, Lee H., Jr.: Influence of Display and Control Compatibility on Pilot-Induced Oscillations. NASA TP-1936, December 1981, 38 p.
(Avail: NTIS Subject Category 53 RTOP 534-04-13)

Quick-Release Technical Memorandums

95. Brown, Lawrence W.: The Effects of Lateral Aerodynamic Uncertainties on the Handling Qualities of the Space Shuttle Orbiter at Mach Numbers of 1.5 and .6. NASA TM-83193, September 1981, 41 p.
(Avail: NTIS Subject Category 05 RTOP 505-34-33)
96. Dunn, H. J.: NASA LaRC RATFOR Documentation Version 1.0. NASA TM-83173, September 1981, 20 p.
(Avail: NTIS Subject Category 61 RTOP 505-34-33)
97. Lallman, Frederick J.: Simplified Design Point Performance Model of a Dry Turbofan Engine Cycle. NASA TM-83112, May 1981, 20 p.
(Avail: NTIS Subject Category 07 RTOP 505-34-33)
98. Lallman, Frederick J.: Simplified Off-Design Performance Model of a Dry Turbofan Engine Cycle. NASA TM-83204, September 1981, 32 p.
(Avail: NTIS Subject Category 07 RTOP 505-34-33)
99. Woolley, Charles T.; and Groom, Nelson J.: Description of a Digital Computer Simulation of an Annular Momentum Control Device (AMCD) Laboratory Test Model. NASA TM-81797, February 1981, 20 p.
(Avail: NTIS Subject Category 61 RTOP 506-54-83)

Contractor Reports

100. Bainum, P. M.; Kumar, V. K.; Krishna, R.; and Reddy, A. S. S. R.: The Dynamics and Control of Large Flexible Space Structures - IV. (NSG-1414 Howard University.) NASA CR-165815, August 1981, 103 p.
(Avail: NTIS Subject Category 18 RTOP 506-54-73)

101. Deam, Dirk J.; See, Michael J.; and Shane, Douglas B.: Pilot Controls and Single Pilot IFR Flight: Description of Potential Control Devices and Assessment of Their Applicability in General Aviation Aircraft. (NAG1-94 The University of Kansas Center for Research, Inc.) NASA CR-165738, February 1981, 81 p.
(Avail: NTIS Subject Category 08 RTOP 505-41-73)
102. Glenn, Floyd A., III; and Doane, Stephanie M.: A Human Operator Simulator Model of the NASA Terminal Configured Vehicle (TCV). (NAS1-15983 Analytics.) NASA CR-3421, May 1981, 121 p.
(Avail: NTIS Subject Category 54 RTOP 534-04-13)
103. Joshi, S. M.: A Controller Design Approach for Large Flexible Space Structures. (NAS1-16126 Vigyan Research Associates, Inc.) NASA CR-165717, May 1981, 51 p.
(Avail: NTIS Subject Category 18 RTOP 506-54-93)
104. Parker, James F., Jr.; Duffy, Jack W.; and Christensen, Diane G.: A Flight Investigation of Simulated Data-Link Communications During Single-Pilot IFR Flight - Volume I - Experimental Design and Initial Tests. (NAS1-16037 BioTechnology, Inc.) NASA CR-3461, August 1981, 60 p.
(Avail: NTIS Subject Category 04 RTOP 505-41-73)
105. Roskam, J.: On the Interaction Between Six Types of Cockpit Controllers, Pilots, and Control Surfaces. (NAG1-94 The University of Kansas Center for Research, Inc.) NASA CR-165755, July 1981, 46 p.
(Avail: NTIS Subject Category 08 RTOP 505-41-73)
106. Varanasi, Murali R.: Feasibility Study of a Microprocessor-Based Oculometer System. (NSG-1379 Old Dominion University Research Foundation.) NASA CR-164286, January 1981, 91 p.
(Avail: NTIS Subject Category 74 RTOP 505-35-23)
107. Witkin, Andrew P.: Computational Theory of Line Drawing Interpretation. (NAS1-16282 SRI International.) NASA CR-165804, December 1981, 30 p.
(Avail: NTIS Subject Category 63 RTOP 506-54-13)

Journal Articles and Periodical Literature

108. Bergeron, Hugh P.: Single Pilot IFR Autopilot Complexity/Benefit Trade-Off Study. Journal of Aircraft, Volume 18, Number 9, September 1981, p. 705-706.
(Avail: AIAA Subject Category 08 RTOP 505-41-73)
109. Mahesh, J. K.; Stone, C. R.; Garrard, W. L.; and Dunn, H. J.: Control Law Synthesis for Flutter Suppression Using Linear Quadratic Quassian Theory. Journal of Guidance and Control, Volume 4, Number 4, July-August 1981, p. 415-422.
(Avail: AIAA Subject Category 39 RTOP 505-34-33)
110. Moul, Thomas M.; and Taylor, Lawrence W., Jr.: Determination of an Angle of Attack Sensor Correction for a Light Airplane. Journal of Aircraft, Volume 18, Number 10, October 1981, p. 838-843.
(Avail: AIAA Subject Category 05 RTOP 505-41-13)

111. Reddy, A. S. S. R.; Bainum, P. M.; Krishna R.; and Hamer, H. A.: Control of a Large Flexible Platform in Orbit. Journal of Guidance and Control, Volume 4, Number 6, November-December 1981, p. 642-649.
(Avail: AIAA Subject Category 18 RTOP 506-54-93)

Meeting/Conference Papers

112. Armstrong, E. S.: Systems Identification Technology Development for Large Space Systems. Presented at the Third Annual Large Space Systems Technology Review, November 16-19, 1981, Hampton, Virginia.
(Avail: NTIS, NASA CP-2215 Subject Category 15 RTOP 506-62-43)
113. Batterson, James G.: Estimation of Airplane Stability and Control Derivatives at High Angles of Attack. Presented at the AIChE/ASME/IEEE/ISA/AIAA 1981 Joint Automatic Control Conference, June 17-19, 1981, Charlottesville, Virginia.
(Avail: AACC, Vol. II, TP-4A Subject Category 08 RTOP 505-34-33)
114. Gracey, C.; Cliff, E. M.; Lutze, F. H.; and Kelley, H. J.: Fixed-Trim Re-Entry Guidance. Presented at the AIAA Guidance and Control Conference, August 19-21, 1981, Albuquerque, New Mexico. AIAA Paper No. 81-1754.
(Avail: AIAA Subject Category 12 RTOP 505-34-33)
115. Harris, R. L., Sr.; Tole, J. R.; Stephens, A. T.; and Ephrath, A. E.: Visual Scanning Behavior and Pilot Workload. Presented at the 1981 Symposium on Aviation Psychology, April 22-23, 1981, Columbus, Ohio.
(Avail: Ohio State Univ., Proceedings Subject Category 53 RTOP 505-35-23)
116. Harris, Randall L., Sr.: Evaluation of Display Improvements. Presented at the 25th Annual Meeting of the Human Factors Society, October 12-16, 1981, Rochester, New York.
(Avail: HFS Subject Category 53 RTOP 505-35-23)
117. Klein, V.; Batterson, J. G.; and Murphy, P. C.: Determination of Model Structure Parameters of an Airplane From Pre- and Post-Stall Flight Data. Presented at the AIAA 8th Atmospheric Flight Mechanics Conference, August 19-21, 1981, Albuquerque, New Mexico. AIAA Paper No. 81-1866.
(Avail: AIAA Subject Category 08 RTOP 505-34-33)
118. Miller, G. Kimball, Jr.: A Decoupled Control System for Improved Flight Performance in Wind Shear. Presented at the AIChE/ASME/IEEE/ISA/AIAA 1981 Joint Automatic Control Conference, June 17-19, 1981, Charlottesville, Virginia.
(Avail: AACC, Vol. I, WA-1D Subject Category 08 RTOP 505-34-33)
119. Montgomery, Raymond C.; Horner, Garnett C.; Akpan, Ime I.; and Vandervelde, Wallace E.: On Incorporating Reliability Considerations Into Control System Designs. Presented at the 20th IEEE Conference on Decision and Control, December 16-18, 1981, San Diego, California.
(Avail: IEEE Subject Category 18 RTOP 506-54-93)

120. Montgomery, Raymond C.; Horner, Garnett C.; and Cole, Stanley R.: Experimental Research on Structural Dynamics and Control. Presented at the VPI&SU/AIAA Symposium on Dynamics and Control of Large Flexible Spacecraft, June 15-17, 1981, Blacksburg, Virginia.
(Available: VPI&SU, Proceedings Subject Category 39 RTOP 506-54-93)

121. Price, Douglas B.; Calise, Anthony J.; and Moerder, Daniel D.: Piloted Simulation of an On-Board Trajectory Optimization Algorithm. Presented at the AICHE/ASME/IEEE/ISA/AIAA 1981 Joint Automatic Control Conference, June 17-19, 1981, Charlottesville, Virginia.
(Avail: AACC, Volume I, TA-1C Subject Category 08 RTOP 505-34-33)

122. Schy, Albert A.; and Giesy, Daniel P.: Multiobjective Insensitive Design of Airplane Control Systems With Uncertain Parameters. Presented at the AIAA Guidance and Control Conference, August 19-21, 1981, Albuquerque, New Mexico. AIAA Paper No. 81-1818.
(Avail: AIAA Subject Category 08 RTOP 505-34-33)

123. Suit, William T.; and Mayo, Marna H.: On Matching the Systems Identification Technique to the Particular Application. Presented at the AICHE/ASME/IEEE/ISA/AIAA 1981 Joint Automatic Control Conference, June 17-19, 1981, Charlottesville, Virginia.
(Avail: AACC, Volume II, TP-4C Subject Category 08 RTOP 506-62-43)

124. Taylor, L. W., Jr.: Configurational and System Requirements for the Control of Large Space Antenna Systems. Presented at the Third Annual Large Space Systems Technology Review, November 16-19, 1981, Hampton, Virginia.
(Avail: NTIS, NASA CP-2215 Subject Category 15 RTOP 506-62-43)

125. Taylor, Lawrence W., Jr.; and Klein, Vladislav: Analytical Techniques for the Analysis of Stall Spin Flight Test Data. Presented at the 1981 SAE Business Aircraft Meeting and Exposition, April 7-10, 1981, Wichita, Kansas. SAE Paper No. 810599.
(Avail: SAE Subject Category 66 RTOP 505-34-33)

126. Thau, F. E.; Montgomery, R. C.; and Horner, G. C.: On-Line Structural Parameter Identification. Presented at the AIAA Guidance and Control Conference, August 19-21, 1981, Albuquerque, New Mexico. AIAA Paper No. 81-1846.
(Avail: AIAA Subject Category 39 RTOP 506-53-63)

127. Weislogel, G. S.; and Bergeron, H. P.: The General Aviation Single Pilot IFR Operation. Presented at the AIAA Aircraft Systems and Technology Conference, August 11-13, 1981, Dayton, Ohio. AIAA Paper No. 81-1644.
(Avail: AIAA Subject Category 03 RTOP 505-41-73)

Computer Programs

No computer programs.

Tech Briefs

128. Phillips, William H.: Solar-Powered Aircraft. NASA Tech Brief LAR-12615.
Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Machinery)
129. Tiffany, Sherwood H. (Kentron International, Inc.): Program Structure Combines
Segmentation and Dynamic Storage. NASA Tech Brief LAR-12830. Released 1981.
(Avail: NASA Langley Technology Utilization Office
Category: Mathematics and Information Sciences)

Patents

130. Groom, Nelson J.; Anderson, Willard W.; and Phillips, William H.: Rim Inerted
Measuring System. U.S. Patent 4,281,384. Issued 1981.
(Avail: U.S. Patent & Trademark Office Subject Category 04)

Oral Presentations to Conferences/Workshops

131. Sarma, Garimella R.; and Adams, James J.: Evaluation of Separation of
Parameters in Display in Approach to Landing. Presented at the 17th Annual
Conference on Manual Control, June 16-18, 1981, Los Angeles, California.

PUBLICATIONS FOR FLIGHT ELECTRONICS DIVISION

Formal Reports

132. Anon: Lightning Technology. Supplement to CP-2128, January 1981, 133 p.
(Avail: NTIS Subject Category 47 RTOP 505-44-13)
133. Anon: Joint University Program for Air Transportation Research - 1980. NASA CP-2176, March 1981, 146 p.
(Avail: NTIS Subject Category 01 RTOP 505-34-13)
134. Anon: Ruggedized Minicomputer Hardware and Software Topics - 1981. NASA CP-2206, December 1981, 226 p.
(Avail: NTIS Subject Category 62 RTOP 505-41-63)
135. Anon: Optical Information Processing for Aerospace Applications. NASA CP-2207, December 1981, 365 p.
(Avail: NTIS Subject Category 74 RTOP 506-54-63)
136. Credeur, Leonard; Davis, Christina M.; and Capron, William R.: Evaluation of Microwave Landing System (MLS) Effect on the Delivery Performance of a Fixed-Path Metering and Spacing System. NASA TP-1844, August 1981, 131 p.
(Avail: NTIS Subject Category 04 RTOP 534-04-13)
137. Huck, Friedrich O.; Park, Stephen K.; Halyo, Nesim; and Stallman, Steven T.: Application of Information Theory to the Design of Line-Scan Imaging Systems. NASA TP-1897, September 1981, 39 p.
(Avail: NTIS Subject Category 35 RTOP 506-61-53)
138. Meredith, Barry D.; and Kelly, W. Lane, IV: A Design Approach to Real-Time Formatting of High Speed Multispectral Image Data. NASA TP-1870, May 1981, 17 p.
(Avail: NTIS Subject Category 60 RTOP 506-61-53)
139. Nastrom, Gregory D.; Holdeman, James D.; and Davis, Richard E.: Cloud-Encounter and Particle-Concentration Variabilities From GASP Data. NASA TP-1886, December 1981, 244 p.
(Avail: NTIS Subject Category 47 RTOP 534-01-13)
140. Ostroff, Aaron J.; Hueschen, Richard M.; Hellbaum, R. F.; and Creedon, J. F.: Flight Evaluation of a Simple Total Energy-Rate System With Potential Wind-Shear Application. NASA TP-1854, May 1981, 49 p.
(Avail: NTIS Subject Category 06 RTOP 505-34-33)
141. Rowland, Carroll W.: Excess Noise in Tunable Diode Lasers. NASA TP-1935, November 1981, 14 p.
(Avail: NTIS Subject Category 36 RTOP 147-40-01)

Quick-Release Technical Memorandums

142. Cockrell, C. R.: "Finite Part" Electric and Magnetic Stored Energies for Planar Antennas. NASA TM-81955, February 1981, 27 p.
(Avail: NTIS Subject Category 32 RTOP 505-34-13)

143. Credeur, Leonard: Transformation Formulas Relating Geodetic Coordinates to a Tangent to Earth, Plane Coordinate System. NASA TM-83174, August 1981, 30 p.
(Avail: NTIS Subject Category 04 RTOP 534-04-13)
144. Crouch, Roger; Fripp, Archibald L.; Debnam, William J.; and Clark, Ivan O.: Experiment Requirements and Implementation Plan (ERIP) for Semiconductor Materials Growth in Low-G Environment Experiment No. MPS77F087. NASA TM-81943, February 1981, 53 p.
(Avail: NTIS Subject Category 76 RTOP 542-03-30)
145. Gilreath, Melvin C.; and Chatterjee, J. S.: General Aviation Aircraft Antennas for the Global Positioning System. NASA TM-83212, October 1981, 36 p.
(Avail: NTIS Subject Category 32 RTOP 505-34-13)
146. Gilreath, Melvin C.; Earl, Henry S., Jr.; and Langford, Berkley A., Jr.: MLS Antenna Locations for the de Havilland DASH 7 Aircraft. NASA TM-83195, July 1981, 45 p.
(Avail: NTIS Subject Category 32 RTOP 505-34-13)
147. Lawrence, Roland W.: An Investigation of Radiometer Design Using Digital Processing Techniques. NASA TM-81932, January 1981, 100 p.
(Avail: NTIS Subject Category 33 RTOP 506-61-33)
148. Pitts, Felix L.; and Thomas, Mitchel E.: 1980 Direct Strike Lightning Data. NASA TM-81946, February 1981, 43 p.
(Avail: NTIS Subject Category 47 RTOP 505-44-13)

Contractor Reports

149. Aanstoos, J. V.; Ruedger, W. H.; and Snyder, W. E.: Concepts for On-Board Satellite Image Registration - Final Report - Volume Three - Impact of VLSI/VHSIC on Satellite On-Board Signal Processing. (NAS1-15768 Research Triangle Institute.) NASA CR-165735, June 1981, 59 p.
(Avail: NTIS Subject Category 19 RTOP 541-01-13)
150. Akey, N. D.: Technology Transfer of NASA Microwave Remote Sensing System. (NAS1-16380 OAO Corporation.) NASA CR-165791, October 1981, 35 p.
(Avail: NTIS Subject Category 48 RTOP 637-01-03)
151. Braslow, Albert L.: Aerodynamic Evaluation of Circulation Control Propellers. (NAS1-14970 The Bionetics Corporation.) NASA CR-165748, June 1981, 73 p.
(Avail: IAC Subject Category 07 RTOP 512-52-03)
152. Capron, W. R.; and Rodgers, W. G.: An Operation/User Guide for the Terminal Area Air Traffic Model (TAATM) Fast-Time and Real-Time Simulation Programs. (NAS1-16000 Kentron International, Inc.) NASA CR-165662, February 1981, 57 p.
(Avail: STIF Subject Category 60 RTOP 534-04-13)
153. Casasent, David; and Luu, Thanh Ky: Optical Processing for Landmark Identification. (NAS1-16125 Carnegie-Mellon University.) NASA CR-165757, September 1981, 72 p.
(Avail: NTIS Subject Category 74 RTOP 506-61-43)

154. Daluge, D. R.; and Ruedger, W. H.: Concepts for On-Board Satellite Image Registration - Final Report - Volume Two - IAS Prototype Performance Evaluation Standard Definition. (NAS1-15768 Research Triangle Institute.) NASA CR-165734, June 1981, 33 p.
(Avail: NTIS Subject Category 19 RTOP 541-01-13)
155. Edmonds, W.; and Fabert, M.: Atmospheric Constituents Modeling. (NAS1-15934 Systems and Applied Sciences Corporation.) NASA CR-165629, January 1981, 78 p.
(Avail: NTIS Subject Category 61 RTOP 620-12-00)
156. Glaser, Robert E.; and Masson, Gerald M.: Transient Upsets in Microprocessor Controllers. (NSG-1442 The Johns Hopkins University.) NASA CR-165713, May 1981, 34 p.
(Avail: NTIS Subject Category 33 RTOP 505-34-43)
157. Hopkins, A. L.; Martin, J. H.; Brock, L. D.; Jansson, D. G.; Serben, S.; Smith, T. B.; and Hanley, L. D.: System Data Communication Structures for Active-Control Transport Aircraft - Volume I. (NAS1-15359 The Charles Stark Draper Laboratory, Inc.) NASA CR-165773, 1981.
(Avail: NTIS (Pending) Subject Category 04 RTOP 516-53-03)
158. Hopkins, A. L.; Martin, J. H.; Brock, L. D.; Jansson, D. G.; Serben, S.; Smith, T. B.; and Hanley, L. D.: System Data Communication Structures for Active-Control Transport Aircraft - Volume II. (NAS1-15359 The Charles Stark Draper Laboratory, Inc.) NASA CR-165774, 1981.
(Avail: NTIS (Pending) Subject Category 04 RTOP 516-53-03)
159. McGough, John G.; and Swern, Fred L.: Measurement of Fault Latency in a Digital Avionic Mini Processor. (NAS1-15946 Bendix Corporation.) NASA CR-3462, October 1981, 209 p.
(Avail: NTIS Subject Category 59 RTOP 505-34-43)
160. Montoya, R. J.; Britt, C. L.; Ware, C. F.; and Deuel, D. R.: Capabilities and Data Quality Estimates of the Wallops Flight Center Airport (WFCA) Experimental Facility. (NAS1-12118 Research Triangle Institute.) NASA CR-165740, August 1981, 245 p.
(Avail: STIF Subject Category 09 RTOP 534-04-13)
161. Motyka, P.; Landey, M.; and McKern, R.: Failure Detection and Isolation Analysis of a Redundant Strapdown Inertial Measurement Unit. (NAS1-15933 The Charles Stark Draper Laboratory, Inc.) NASA CR-165658, February 1981, 88 p.
(Avail: NTIS Subject Category 04 RTOP 505-34-13)
162. Pines, Samuel: Terminal Area Automatic Navigation, Guidance, and Control Research Using the Microwave Landing System (MSL). Part 1 - Automatic Rollout, Turnoff, and Taxi. (NAS1-15116 Analytical Mechanics Associates, Inc.) NASA CR-3451, August 1981, 79 p.
(Avail: NTIS Subject Category 08 RTOP 534-04-13)
163. Pines, Samuel; and McConnell, Judy: An Influence Coefficient Method for the Application of the Modal Technique to Wing Flutter Suppression of the DAST ARW-1 Wing. (NAS1-15593 Analytical Mechanics Associates, Inc.) NASA CR-165772, November 1981, 48 p.
(Avail: NTIS Subject Category 02 RTOP 505-34-33)

164. Ruedger, W. H.: Feasibility of Collision Warning, Precision Approach and Landing Using the GPS. (NAS1-15833 Research Triangle Institute.) NASA CR-165675, March 1981, 119 p.
(Avail: NTIS Subject Category 04 RTOP 505-34-13)
165. Staff of Eaton Corporation: Microwave Precision Radiometer Front-End. (NAS1-15611 Eaton Corporation.) NASA CR-165737, June 1981, 356 p.
(Avail: STIF Subject Category 33 RTOP 506-61-33)
166. Trivedi, Kishor S.; and Geist, Robert M.: A Tutorial on the CARE III Approach to Reliability Modeling. (NAG1-70 Duke University.) NASA CR-3488, December 1981, 61 p.
(Avail: NTIS Subject Category 59 RTOP 505-34-43)

Journal Articles and Periodical Literature

167. Blume, Hans-Juergen C.: Measurement of Dielectric Properties and Determination of Microwave Emissivity of Polluted Waters. IEEE Transaction on Instrumentation and Measurements, Volume IM-29, Number 4, December 1980 (Released in 1981), p. 289-291.
(Avail: IEEE Subject Category 35 RTOP 146-40-13)
168. Blume, Hans-Juergen C.; Kendall, Bruce M.; and Fedors, John C.: Multifrequency Radiometer Detection of Submarine Fresh-Water Sources Along the Puerto Rican Coastline. Journal of Geophysical Research, Volume 86, Number C6, June 20, 1981, p. 5283-5291.
(Avail: AGU Subject Category 43 RTOP 146-40-13)
169. Huck, Friedrich O.; Halyo, N.; and Park, Stephen K.: Information Efficiency of Line-Scan Imaging Mechanisms. Applied Optics, Volume 20, Number 11, June 1, 1981, p. 1990-2007.
(Avail: OSA Subject Category 35 RTOP 506-61-53)
170. Jobson, Daniel J.; Hardesty, Charles A.; Katzberg, Stephen J.; and Burcher, Ernest A.: Radiometric Performance of the Test-Bed Aircraft Multispectral Scanner (TBAMS) System. Optical Engineering, Volume 20, Number 5, September/October 1981, p. 772-776.
(Avail: SPIE Subject Category 35 RTOP 506-61-43)
171. Katzberg, Stephen J.; Kowitz, Herbert R.; and Rowland, Carroll W.: Noise Effects in an Optical Heterodyne Spectrometer Using Tunable Diode Lasers. Applied Physics Letters, Volume 39, Number 9, November 1, 1981, p. 688-690.
(Avail: AIP Subject Category 36 RTOP 147-40-01)
172. Kendall, Bruce, M.; and Blanton, J. O.: Microwave Radiometer Measurement of Tidally Induced Salinity Changes off the Georgia Coast. Journal of Geophysical Research, July 20, 1981, Volume 86, Number C7, p. 6435-6441.
(Avail: AGU Subject Category 35 RTOP 506-61-63)
173. Meredith, Barry D.; Kelly, W. Lane; and Breckenridge, Roger A.: The Information Adaptive System: An Investigation of Onboard Data Processing. Journal of Spacecraft and Rockets, Volume 18, Number 5, September/October 1981, p. 478-480.
(Avail: AIAA Subject Category 60 RTOP 506-61-53)

Meeting/Conference Papers

174. Aanstoos, J. V.; Ruedger, W. H.; Snyder, W. E.; and Kelly, W. L.: The Impact of VLSI/VHSIC on Satellite on-Board Signal Processing. Presented at the 1981 International Geoscience and Remote Sensing Symposium (IGARRSS '81), June 8-10, Washington, D.C.
(Avail: IEEE Symposium Digest, IGARRSS '81 Subject Category 19
RTOP 506-61-53)
175. Aherron, R. M.; Arduini, R. F.; Davis, R. E.; Huck, F. O.; and Park, S. K.: Earth Feature Identification for Onboard Multispectral Data Editing - Computational Experiments. Presented at the Conference on Optical Information Processing for Aerospace Applications, August 18-19, 1981, Hampton, Virginia.
(Avail: NTIS, NASA CP-2207 Subject Category 35 RTOP 506-45-63)
176. Bailey, M. C.; and Deshpande, M. D.: Resonant Frequency of Rectangular Microstrip Antennas. Presented at the 1981 International IEEE/APS Symposium, June 15-19, 1981, Los Angeles, California.
(Avail: IEEE Antenna & Propagation Society 1981 International Symposium Digest Subject Category 32 RTOP 505-34-13)
177. Bailey, M. C.; and Moskowitz, Steven M.: Radiation Pattern Prediction for Arbitrary Reflector Antennas. Presented at the 1981 International IEEE/APS Symposium, June 15-19, 1981, Los Angeles, California.
(Avail: IEEE Antenna & Propagation Society 1981 International Symposium Digest Subject Category 32 RTOP 506-62-43)
178. Batson, Vernon M.; Hatfield, Jack J.; and Novack, Nathan E.: A Unique Integrated Flight Testing Facility for Advanced Control/Display Research. Presented at the AIAA/SETP/SFTE/SAE 1st Flight Testing Conference, November 11-13, 1981, Las Vegas, Nevada. AIAA Paper No. 81-2490.
(Avail: AIAA Subject Category 09 RTOP 505-34-23)
179. Bavuso, Salvatore J.; McGough, John G.; and Swern, Fred: Latent Fault Modeling and Measurement Methodology for Application to Digital Flight Controls. Presented at the Advanced Flight Control Symposium, August 5-7, 1981, Colorado Springs, Colorado.
(Avail: Naval Air Development Center Subject Category 59
RTOP 505-34-43)
180. Blume, Hans-J. C.; and Kendall, Bruce M.: Passive Microwave Measurements of Temperature and Salinity in Coastal Zones. Presented at the 1981 International Geoscience and Remote Sensing Symposium (IGARRSS '81), June 8-10, 1981, Washington, D.C.
(Avail: IEEE Symposium Digest, IGARRSS '81 Subject Category 43
RTOP 146-40-13)
181. Blume, Hans-Juergen C.: The Suitability of Mesh Membrane Material for Radiometer Reflector Applications. Presented at the Third Annual Large Space Systems Technology Review, November 16-19, 1981, Hampton, Virginia.
(Avail: NTIS, NASA CP-2215 Subject Category 17 RTOP 506-62-02)

182. Brock, Larry D.; Hopkins, Albert L., Jr.; and Spencer, J. Larry: On-Board Communication for Active-Control Transport Aircraft. Presented at the AIAA/IEEE 4th Digital Avionics Systems Conference, November 17-19, 1981, St. Louis, Missouri.
(Avail: AIAA Subject Category 08 RTOP 505-34-43)
183. Campbell, Thomas G.: LARC Antenna Technology Development Summary. Presented at the Third Annual Large Space Systems Technology Review, November 16-19, 1981, Hampton, Virginia.
(Avail: NTIS, NASA CP-2215 Subject Category 17 RTOP 506-62-02)
184. Campbell, Thomas G.: Radio Frequency Verification Tasks Related to a Multiple Aperture Reflector System. Presented at the Third Annual Large Space Systems Technology Review, November 16-19, 1981, Hampton, Virginia.
(Avail: NTIS, NASA CP-2215 Subject Category 17 RTOP 506-62-02)
185. Campbell, Thomas G.; and Young, W. Robert: Preliminary Experimental Test Results Using 35 GHz Offset FED Reflector Simulating Surface Pillows and Aperture Cables. Presented at the Third Annual Large Space Systems Technology Review, November 16-19, 1981, Hampton, Virginia.
(Avail: NTIS, NASA CP-2215 Subject Category 17 RTOP 506-62-02)
186. Croswell, William F.: SLAR Imagery of the Mouth of the Chesapeake. Presented at the Joint NOAA/NASA Symposium on Results of 1980 Chesapeake Bay Plume Study, January 21-23, 1981, Williamsburg, Virginia.
(Avail: NTIS, NASA CP-2188 Subject Category 48 RTOP 146-40-06)
187. Croswell, William F.; Blume, Hans-J. C.; and Johnson, James W.: Microwaves Remote Sensing Measurements of Oil Pollution on the Ocean. Presented at the 1981 International Geoscience and Remote Sensing Symposium (IGARRSS '81), June 8-10, 1981, Washington, D.C.
(Avail: IEEE Symposium Digest, IGARRSS '81 Subject Category 45 RTOP 146-40-13)
188. Crouch, Roger K.; Fripp, A. L.; Debnam, W. J.; Clark, I. O.; and Carlson, F. M.: Ground Based Studies for the Space Processing of Lead-Tin-Telluride. Presented at the Materials Research Society Annual Meeting, November 16-19, 1981, Boston, Massachusetts.
(Avail: MRS Subject Category 27 RTOP 179-80-10)
189. Crouch, Roger K.; Fripp, A. L.; Debnam, W. J.; Taylor, R. E.; and Groot, H.: Thermophysical Properties of Germanium for Thermal Analysis of Growth From the Melt. Presented at the Materials Research Society Annual Meeting, November 16-19, 1981, Boston, Massachusetts.
(Avail: MRS Subject Category 27 RTOP 179-80-10)
190. Downing, D. R.; Bryant, W. H.; and Yenni, K. R.: Flight Test Evaluation of Advanced Symbolology for General Aviation Approach to Landing Displays. Presented at the AIAA Aircraft Systems and Technology Meeting, August 11-13, 1981, Dayton, Ohio. AIAA Paper No. 81-1643.
(Avail: AIAA Subject Category 06 RTOP 505-41-63)

191. Grantham, William L.; Bracalente, Emedio M.; Britt, Charles L., Jr.; Wentz, Frank J.; and Jones, W. Linwood, Jr.: NOSS Scatterometer Performance Study for Operationally Sensing Ocean Winds. Presented at the 1981 International Geoscience and Remote Sensing Symposium (IGARRSS '81), June 8-10, 1981, Washington, D.C.
(Avail: IEEE Symposium Digest, IGARRSS '81 Subject Category 43
RTOP 146-40-06)

192. Grantham, William L.; Bracalente, Emedio M.; Britt, Charles L., Jr.; Wentz, Frank J.; Jones, W. Linwood, Jr.; and Schroeder, Lyle C.: Performance Evaluation of a Spaceborne Scatterometer. Presented at the OCEANS '81 Conference, September 16-18, 1981, Boston, Massachusetts.
(Avail: IEEE Subject Category 43 RTOP 146-40-06)

193. Grew, Gary W.: Test of Real-Time Multichannel Ocean Color Scanner (MOCS) Algorithm During Superflux 1980. Presented at the NOAA/NASA Symposium on Results of 1980 Chesapeake Bay Plume Study, January 21-23, 1981, Williamsburg, Virginia.
(Avail: NTIS, NASA CP-2188 Subject Category 48 RTOP 146-40-15)

194. Harrington, Richard F.: C-Band Stepped Frequency Radiometry for Hurricane Probing. Presented at the 1981 International Geoscience and Remote Sensing Symposium (IGARRSS '81), June 8-10, 1981, Washington, D.C.
(Avail: IEEE Symposium Digest, IGARRSS '81 Subject Category 43
RTOP 146-40-13)

195. Hatfield, Jack J.: Advanced Electronic Displays and Their Potential in Future Transport Aircraft. Presented at the International Air Transport Association (IATA) Technical Symposium entitled "Aviation Technology in the 80's," December 1-4, 1981, Montreal, Canada.
(Avail: IATA Subject Category 06 RTOP 505-34-28)

196. Huck, F. O.; Davis, R. E.; Park, S. K.; Aherron, R. M.; and Arduini, R. F.: Computational Modeling for Smart Multispectral Sensor Design. Presented at the Society of Photo-Optical Instrumentation Engineers Technical Symposium East '81, April 20-24, 1981, Washington, D.C. SPIE Paper No. 278-13, Volume 278, p. 83-100.
(Avail: SPIE Subject Category 72 RTOP 506-61-53)

197. Huck, F. O.; Park, S. K.; Speray, D. E.; and Halyo, N.: Information Density and Efficiency of 2-D Sampled Imagery. Presented at the SPIE's 25th Annual Technical Symposium and Instrument Display, August 24-28, 1981, San Diego, California. SPIE Paper No. 310-05.
(Avail: SPIE Subject Category 35 RTOP 506-61-53)

198. Kendall, Bruce M.: Remote Sensing of the Chesapeake Bay Plume Salinity Via Microwave Radiometry. Presented at the Joint NOAA/NASA Symposium on Results of 1980 Chesapeake Bay Plume Study, January 21-23, 1981, Williamsburg, Virginia.
(Avail: NTIS, NASA CP-2188 Subject Category 48 RTOP 146-40-13)

199. Knight, Vernie H., Jr.: In-Flight Jet Engine Noise Measurement System. Presented at the Instrument Society of America's 27th International Instrumentation Symposium, April 27-30, 1981, Indianapolis, Indiana.
(Avail: ISA, Proceedings Subject Category 06 RTOP 505-32-03)

200. Kopia, Leonard P.; and Luther, Michael R.: Earth Radiation Budget Experiment Instrument Design Status. Presented at the American Meteorological Society Fourth Conference on Atmospheric Radiation, June 16-18, 1981, Toronto, Ontario, Canada.
(Avail: AMS, Proceedings Subject Category 35 RTOP 619-12-01)
201. Luther, Michael R.: A Radiometric Model of an Earth Radiation Budget Radiometer Optical System With Diffuse-Specular Surfaces. Presented at the American Meteorological Society Fourth Conference on Atmospheric Radiation, June 16-18, 1981, Toronto, Ontario, Canada.
(Avail: AMS, Proceedings Subject Category 47 RTOP 619-12-01)
202. McGough, John G.; Swern, Fred; and Bavuso, Salvatore J.: Methodology for Measurement of Fault Latency in a Digital Avionic Miniprocessor. Presented at the AGARD Avionics Panel Symposium on "Tactical Airborne Distributed Computing and Networks," June 22-26, 1981, Roros, Norway.
(Avail: NTIS, AGARD Proceedings (Pending) Subject Category 33 RTOP 505-34-43)
203. Montoya, R. Jorge; England, J. Nick; Hatfield, Jack J.; and Rajala, Sarah A.: An Advanced Programmable/Reconfigurable Color Graphics Display System for Crew Station Technology Research. Presented at the AIAA/IEEE 4th Digital Avionics Systems Conference, November 17-19, 1981, St. Louis, Missouri. AIAA Paper No. 81-2314.
(Avail: AIAA Subject Category 35 RTOP 505-34-23)
204. Nastrom, G. D.; Holdeman, J. D.; and Davis, R. E.: Cloud Encounter and Particle Density Variabilities from GASP Data. Presented at the AIAA 19th Aerospace Sciences Meeting, January 12-15, 1981, St. Louis, Missouri. AIAA Paper No. 81-0308.
(Avail: AIAA Subject Category 47 RTOP 534-01-13)
205. Spiers, R. B.: Development of a Surface Accuracy Measurement System (SAMS) Using LED. Presented at the Third Annual Large Space Systems Technology Review, November 16-19, 1981, Hampton, Virginia.
(Avail: NTIS, NASA CP-2215 Subject Category 17 RTOP 506-62-02)
206. Swern, F.; McGough, J.; and Bavuso, Salvatore J.: Methodology for Measurement of Fault Latency in a Digital Avionics Miniprocessor. Presented at the AIAA/IEEE 4th Digital Avionics Systems Conference, November 17-19, 1981, St. Louis, Missouri. AIAA Paper No. 81-2282.
(Avail: AIAA Subject Category 59 RTOP 516-53-03)
207. Swift, C. T.; Crawford, J. P.; Harrington, R. F.; and Jones, W. L., Jr.: Recent Activities in Combined Active and Passive Remote Sensing of Ice. Presented at the 1981 International Geoscience and Remote Sensing Symposium (IGARRSS '81), June 8-10, 1981, Washington, D.C.
(Avail: IEEE Symposium Digest, IGARRSS '81 Subject Category 45 RTOP 146-40-13)
208. Thomas, Mitchel E.: Direct Strike Lightning Measurement System. Presented at the AIAA/SETP/SFTE/SAE 1st Flight Testing Conference, November 11-13, 1981, Las Vegas, Nevada. AIAA Paper No. 81-2513.
(Avail: AIAA Subject Category 06 RTOP 505-44-13)

Computer Programs

No computer programs.

Tech Briefs

209. Jobson, Daniel J.; Fales, Carl L.; and Katzberg, Stephen J.: Laser/Heterodyne Measurement of Temperature and Salinity. NASA Tech Brief LAR-12766. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)
210. Lampe, Donald R. (Westinghouse Electric Corp.): Monolithic Four-Quadrant Multiplier. NASA Tech Brief LAR-12330A. Released 1981.
(Avail: NASA Langley Technology Utilization Office
Category: Electronic Systems)
211. Lampe, Donald R.; and Brooks, Charles W. (Westinghouse Electric Corp.): Four-Quadrant CCD Analog Multiplier. NASA Tech Brief LAR-12332. Released 1981.
(Avail: NASA Langley Technology Utilization Office
Category: Electronic Systems)
212. Lampe, Donald R.; Farnsworth, Dave L.; and Shutt, Tom J. (Westinghouse Electric Corp.): Monolithic CCD-Array Readout. NASA Tech Brief LAR-12376. Released 1981.
(Avail: NASA Langley Technology Utilization Office
Category: Electronic Systems)
213. Vahey, David W. (Battelle Columbus Laboratories): Fast Holographic Comparator. NASA Tech Brief LAR-12509. Released 1981.
(Avail: NASA Langley Technology Utilization Office
Category: Electronic Systems)

Patents

214. Benz, Harry A.: Image Readout Device With Electronically Variable Spatial Resolution. U.S. Patent 4,279,001. Issued 1981.
(Avail: U.S. Patent & Trademark Office Subject Category 35)
215. Pelchat, Guy M.; Rassweiler, George G.; Gianatasio, Anthony J.; and Young, Lock R.: Adaptive Polarization Separation. (NAS1-13942 Harris Corp.) U.S. Patent 4,264,908. Issued 1981.
(Avail: U.S. Patent & Trademark Office Subject Category 32)

Oral Presentations to Conferences/Workshops

216. Bavuso, S.: The Need for Transient Data in a CARE III Reliability Analysis. Presented at the Workshop on Lightning Effects on Future Aircraft Electronic Systems, November 4-6, 1981, Hampton, Virginia.
217. Belcastro, C.: A Microprocessor-Based Upset Test Method and Results. Presented at the Workshop on Lightning Effects on Future Aircraft Electronic Systems, November 4-6, 1981, Hampton, Virginia.

218. Blume, Hans-Juergen C.: Passive Microwave Measurements of Salinity on the Surface of the German Bight. Presented at the 1981 American Geophysical Union Fall Meeting, December 7-11, 1981, San Francisco, California.
219. Bracalente, Emedio M.; Birrer, I. J.; Dome, George; Berthold, Gert; and Sweet, Jon: 0° Signature of the Amazon Rain Forest Obtained from the SeaSat Scatterometer. Presented at the Symposium on Signature Problems in Microwave Remote Sensing of the Surface of the Earth, January 5-8, 1981, Lawrence, Kansas.
220. Crawford, John P.; Kerpelman, Sally E.; Harrington, Richard F.; and Jones, W. Linwood: Active/Passive Microwave Signatures of the Marginal Sea Ice Zone North of Norway. Presented at the Symposium on Signature Problems in Microwave Remote Sensing of the Surface of the Earth, January 5-8, 1981, Lawrence, Kansas.
221. Croswell, W. F.; Maurer, H. E.; Rawson, R. F.; Oderman, W. E.; Oberholtzer, J. D.; and Johnson, J. W.: Analysis of SAR Imagery of Oil Spills on the Sea. Presented at the Symposium on Signature Problems in Microwave Remote Sensing of the Surface of the Earth, January 5-8, 1981, Lawrence, Kansas.
222. Delnore, Victor E.; Jones, W. Linwood; Black, Peter; and Schaffner, Philip R.: Microwave Scatterometer Measurements of the Ocean for High Wind Speeds and Sea States. Presented at the Symposium on Signature Problems in Microwave Remote Sensing of the Surface of the Earth, January 5-8, 1981, Lawrence, Kansas.
223. Dove, B.: NASA-LaRC Controls & Guidance Program Overview. Presented at the Workshop on Lightning Effects on Future Aircraft Electronic Systems, November 4-6, 1981, Hampton, Virginia.
224. Fripp, A. L.; Crouch, R. K.; Debnam, W. J.; Clark, I. O.; and Ejim, T. I.: Anomalous Behavior in the First to Freeze Region in Directionally Solidified PbSnTe. Presented at the Materials Research Society Annual Meeting, November 16-19, 1981, Boston, Massachusetts.
225. Garner, H. Douglas: How to Build a Good Autopilot. Presented at the Experimental Aircraft Association 1981 Annual Convention, August 1-8, 1981, Hales Corners, Wisconsin.
226. Halyo, N.; and Hueschen, R. M.: Development of a Digital Integrated Automatic Landing System (DIALS) for Steep Approach and Landing. Presented at the AICHE/ASME/IEEE/ISA/AIAA 1981 Joint Automatic Control Conference, June 17-19, 1981, Charlottesville, Virginia.
227. Harrington, Richard F.; Swift, Calvin T.; and Crawford, John P.: Passive Microwave Signatures of First Year and Multiyear Sea Ice at Frequencies Below 10 GHz. Presented at the Symposium on Signature Problems in Microwave Remote Sensing of the Surface of the Earth, January 5-8, 1981, Lawrence, Kansas.
228. Jackson, Bettylou W.; Jones, W. Linwood; Weeks, W. F.; Schaffner, Philip R.; and Stanley, William D.: Radar Scatterometer Measurements of Roughness for First Year Sea Ice. Presented at the Symposium on Signature Problems in Microwave Remote Sensing of the Surface of the Earth, January 5-8, 1981, Lawrence, Kansas.

229. Johnson, J. W.; and Weissman, D. E.: Ocean Gravity Wave Spectrum Measurements From an Aircraft With the Microwave Radar Two-Frequency Technique. Presented at the 1981 American Geophysical Union Fall Meeting, December 7-11, 1981, San Francisco, California.
230. Johnson, James W.; and Crosswell, William F: Radar Scattering Signatures of Oil Films on the Sea Surface. Presented at the Symposium on Signature Problems in Microwave Remote Sensing of the Surface of the Earth, January 5-8, 1981, Lawrence, Kansas.
231. Johnson, James W.; Weissman, David E.; and Kim, Jeung G.: Results of Two Frequency (Δk) Aircraft Scatterometer Measurements of Ocean Surface Wave Spectral Characteristics. Presented at the IUCRM Symposium on Wave Dynamics and Radio Probing of the Ocean Surface, May 13-15, 1981, Miami, Florida.
232. Jones, W. Linwood; Birrer, Ivan J.; Bracalente, E. M.; and Delnore, V. E.: Evaluation of the SeaSat Scatterometer Wind Speed Measurement During Hurricanes. Presented at the 1981 Spring Meeting of the American Geophysical Union, May 25-29, 1981, Baltimore, Maryland.
233. Jones, W. Linwood; Wentz, Frank J.; and Delnore, Victor E.: Anisotropy of Cross-Polarized Backscatter From the Ocean's Surface. Presented at the Symposium on Signature Problems in Microwave Remote Sensing of the Surface of the Earth, January 5-8, 1981, Lawrence, Kansas.
234. Migneault, G.: Diagnostic Emulation Analysis Capability for Digital Systems. Presented at the Workshop on Lightning Effects on Future Aircraft Electronic Systems, November 4-6, 1981, Hampton, Virginia.
235. Pitts, F.: Lightning Effects Research Program. Presented at the Workshop on Lightning Effects on Future Aircraft Electronic Systems, November 4-6, 1981, Hampton, Virginia.
236. Pitts, F.: Flight Experiment Definition and Summary. Presented at the Workshop on Lightning Effects on Future Aircraft Electronic Systems, November 4-6, 1981, Hampton, Virginia.
237. Schroeder, Lyle C.; Mitchell, John L.; Grantham, William L.; and Sweet, Jon L.: SeaSat Measurements of the Ku-Band Radar Signature of the Ocean. Presented at the Symposium on Signature Problems in Microwave Remote Sensing of the Surface of the Earth, January 5-8, 1981, Lawrence, Kansas.
238. Spencer, J. Larry; Hendricks, Herbert D.; and Magee, Carl J.: Fiber Optic Data Distribution Concept for Civil Aircraft. Presented at the 1981 Annual Meeting of the Virginia Academy of Science, May 12-15, 1981, Norfolk, Virginia.
239. Spitzer, Cary R.: The Voyager Mission to Jupiter and Saturn. Presented at the Columbia Section of the Institute of Electrical and Electronics Engineers, December 8, 1981, Lexington, South Carolina.
240. Swift, C. T.: Unusual Signatures Observed in the Remote Sensing of Natural Surfaces. Presented at the Symposium on Signature Problems in Microwave Remote Sensing of the Surface of the Earth, January 5-8, 1981, Lawrence, Kansas.

- 241. Swift, C. T.; Harrington, R. F.; Jones, W. L.; and Delnore, V. E.: Radar and Radiometric Measurements Over the Greenland Ice Cap. Presented at the Symposium on Signature Problems in Microwave Remote Sensing of the Surface of the Earth, January 5-8, 1981, Lawrence, Kansas.
- 242. Thomas, M.: Data System Description. Presented at the Workshop on Lightning Effects on Future Aircraft Electronic Systems, November 4-6, 1981, Hampton, Virginia.
- 243. Thomas, R.: Digital System Hardware Description Technique Used in Emulation. Presented at the Workshop on Lightning Effects on Future Aircraft Electronic Systems, November 4-6, 1981, Hampton, Virginia.
- 244. Zaepfel, P.: Electromagnetic Sensors. Presented at the Workshop on Lightning Effects on Future Aircraft Electronic Systems, November 4-6, 1981, Hampton, Virginia.

PUBLICATIONS FOR INSTRUMENT RESEARCH DIVISION

Formal Reports

245. Anon: NASA Metrology and Calibration - 1980. NASA CP-2174, April 1981, 151 p.
(Avail: NTIS Subject Category 35 RTOP 505-31-63)
246. Burner, A. W.; and Goad, W. K.: Phase Control During Reconstruction of Holographically Recorded Flow Fields Using Real-Time Holographic Interferometry. NASA TM-81953, March 1981, 7 p.
(Avail: NTIS Subject Category 35 RTOP 506-51-23)
247. Burner, A. W.; and Goad, W. K.: Combined Single-Pulse Holography and Time-Resolved Laser Schlieren for Flow Visualization. NASA TM-83109, June 1981, 13 p.
(Avail: NTIS Subject Category 35 RTOP 506-51-23)
248. Clemmons, James I., Jr.: Laser Velocimeter (Autocovariance) Buffer Interface. NASA TM-83110, May 1981, 20 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-53)
249. Gartrell, Luther R.; Gooderum, Paul B.; Hunter, William W., Jr.; and Meyers, James F.: Laser Velocimetry Technique Applied to the Langley 0.3-Meter Transonic Cryogenic Tunnel. NASA TM-81913, April 1981, 35 p.
(Avail: NTIS Subject Category 35 RTOP 505-31-53)
250. Goad, William K.; and Burner, Alpheus W.: Holographic Flow Visualization at the Langley Expansion Tube. NASA TM-83116, June 1981, 22 p.
(Avail: NTIS Subject Category 35 RTOP 506-51-23)
251. Hill, Gerald F.; Sachse, Glen W.; and Cofer, Wesley R., III: Summary of 1978 Southeastern Virginia Urban Plume Study - Aircraft Results for Carbon Monoxide, Methane, Nonmethane Hydrocarbons, and Ozone. NASA TM-81930, March 1981, 49 p.
(Avail: NTIS Subject Category 45 RTOP 506-61-53)
252. Rind, Emanuel; and Bryant, Emmett L.: Design and Analysis of a Torsion Braid Pendulum Displacement Transducer. NASA TP-1840, June 1981, 61 p.
(Avail: NTIS Subject Category 35 RTOP 505-31-53)
253. Singh, Jag J.; Khandelwal, G. S.; and Mall, Gerald H.: A Radionuclide Counting Technique for Measuring Wind Velocity. NASA TM-83202, December 1981, 23 p.
(Avail: NTIS Subject Category 35 RTOP 141-20-10)
254. Stewart, W. F.; Edwards, S. Franklin; Vann, David S.; and McCormick, Royce F.: Modulated Infrared Radiant Source. NASA TM-83118, June 1981, 13 p.
(Avail: NTIS Subject Category 35 RTOP 505-31-53)
255. Tripp, John S.: An Algorithm for Minimum-Cost Set-Point Ordering in a Cryogenic Wind Tunnel. NASA TP-1923, November 1981, 30 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-63)

Quick-Release Technical Memorandums

256. Moughon, W. Clayton: Evaluation of Several Ultrasonic Flowmeter Transducers in Cryogenic Environment. NASA TM-83117, April 1981, 9 p.
(Avail: NTIS Subject Category 35 RTOP 505-31-63)
257. Snow, W. L.; Burner, A. W.; and Goad, W. K.: Dynamic Moiré Methods for Detection of Loosened Space Shuttle Tiles. NASA TM-83205, September 1981, 16 p.
(Avail: NTIS Subject Category 35 RTOP 506-89-01)
258. Zuckerwar, Allan J.: Acoustic Ground Impedance Meter. NASA TM-83227, December 1981, 15 p.
(Avail: NTIS Subject Category 35 RTOP 505-32-03)
259. Zuckerwar, Allan J.; and Sprinkle, Danny R.: Proposed Dynamic Phase Difference Method for the Detection of Tile Debonding From the Space Shuttle Orbiter. NASA TM-83140, June 1981, 15 p.
(Avail: NTIS Subject Category 18 RTOP 506-89-01)

Contractor Reports

260. Greiling, P. T.; and Devendorf, D.: GaAs Ultrahigh-Speed Analog-to-Digital Converter Design. (NAS1-15816 Hughes Research Laboratories.) NASA CR-165795, November 1981, 95 p.
(Avail: STIF Subject Category 33 RTOP 506-54-63)
261. Hertel, Richard J.; and Hoilman, Kent A.: Stereo Electro-Optical Tracker Study for the Measurement of Model Deformations at the National Transonic Facility. (NAS1-16580 ITT Aerospace/Optical Division.) NASA CR-165821, 1981.
(Avail: NTIS (Pending) Subject Category 35 RTOP 505-31-63)
262. Javan, A.; and Guerra, M.: Photoexcitation of Lasers and Chemical Reactions for NASA Missions - A Theoretical Study. (NAS1-14688 Laser Development Corporation.) NASA CR-3428, May 1981, 48 p.
(Avail: NTIS Subject Category 36 RTOP 506-61-53)
263. Koch, T. L.; Merilainen, C. A.; and Thom, R. D.: Advanced Indium Antimonide Monolithic Charge Coupled Infrared Imaging Arrays. (NAS1-16383 Santa Barbara Research Center.) NASA CR-165799, November 1981, 66 p.
(Avail: NTIS Subject Category 35 RTOP 506-61-43)
264. Koch, T. L.; Thom, R. D.; and Parrish, W. J.: Advanced InSb Monolithic Charge Coupled Infrared Imaging Devices (CCIRID). (NAS1-15551 Santa Barbara Research Center.) NASA CR-165766, September 1981, 92 p.
(Avail: NTIS Subject Category 35 RTOP 506-18-13)
265. Ladany, I.; Levin, E. R.; Magee, C. W.; and Smith, R. T.: InGaAsP/InP Laser Development for Single-Mode, High-Data-Rate Communications. (NAS1-15962 RCA Laboratories.) NASA CR-3477, November 1981, 50 p.
(Avail: NTIS Subject Category 36 RTOP 506-54-63)

266. Linden, K. J.; Butler, J. F.; Nill, K. W.; and Reeder, R. E.: Development of Lead Salt Semiconductor Lasers for the 9-17 Micron Spectral Region. (NAS1-15190 Laser Analytics, Inc.) NASA CR-165682, March 1981, 102 p. (Avail: NTIS Subject Category 36 RTOP 506-61-33)
267. Miller, Matthew D.: Development of MBE Grown Pb-Salt Semiconductor Lasers for the 8.0 to 15.0 Micrometer Spectral Region. (NAS1-14996 Perkin-Elmer Corporation.) NASA CR-165683, March 1981, 74 p. (Avail: NTIS Subject Category 36 RTOP 506-61-33)

Journal Articles and Periodical Literature

268. Breazeale, M. A.; Cantrell, J. H., Jr.; and Heyman, J. S.: Ultrasonic Wave Velocity and Attenuation Measurements. Methods of Experimental Physics, Volume 19, May 1981, p. 67-136. (Avail: Academic Press Subject Category 71 RTOP 505-07-06)
269. Burner, A. W.; and Franke, J. M.: Schlieren With a Laser Diode Source. Optical Engineering, Volume 20, Number 5, September/October 1981, p. 801-802. (Avail: SPIE Subject Category 35 RTOP 505-31-53)
270. Chern, Engmin J.; Cantrell, John H., Jr.; and Heyman, Joseph S.: Improved Formula for Continuous Wave Measurements of Ultrasonic Phase Velocity. Journal of Applied Physics, Volume 52, Number 5, May 1981, p. 3200-3204. (Avail: AIP Subject Category 71 RTOP 505-33-43)
271. Claus, Richard O.; and Cantrell, John H., Jr.: Optical Probing of Pulsed Acoustic Surface Waves Using Wideband Differential Interferometry. Acoustics Letters, Volume 5, Number 1, July 1981, p. 1-4. (Avail: Fluid Mechanics Research Institute Subject Category 71 RTOP 505-33-43)
272. Honaker, William C.; Hunter, William W., Jr.; and Woods, William C.: Utilization of an Electron Beam for Density Measurements in Hypersonic Helium Flow. AIAA Journal, Volume 19, Number 4, April 1981, p. 458-459. (Avail: AIAA Subject Category 35 RTOP 505-31-23)
273. Lengsfeld, B. H., III; Phillips, D. H.; and Schug, J. C.: Half-Projected Hartree-Fock Calculations on Several Small Molecules. Journal of Chemical Physics, Volume 74, Number 9, May 1, 1981, p. 5174-5180. (Avail: AIP Subject Category 25 RTOP 506-53-23)
274. Lengsfeld, Byron H., III; Jafri, J. A.; Phillips, Donald H.; and Bauschlicher, Charles W., Jr.: On the Use of Corresponding Orbitals in the Calculation of Nonorthogonal Transition Moments. Chemical Physics, Volume 74, Number 12, June 15, 1981, p. 6849-6856. (Avail: AIP Subject Category 25 RTOP 147-30-01)
275. She, C. Y.; Fairbank, W. M., Jr.; and Exton, R. J.: Measuring Molecular Flows With High-Resolution Stimulated Raman Spectroscopy. IEEE Journal of Quantum Electronics, Volume QE-17, Number 1, January 1981, p. 2-4. (Avail: IEEE Subject Category 35 RTOP 505-36-13)

276. Stronach, C. E.; Squire, K. R.; Arrott, A. S.; Patterson, B. D.; Heinrich, B.; Lankford, W. F.; Flory, A. T.; Kossler, W. J.; and Singh, J. J.: Muon Hyperfine Fields in Iron and Its Dilute Alloys. Journal of Magnetism and Magnetic Materials, Volume 25, Number 2, December 1981, p. 187-193.
(Avail: North-Holland Pub. Co. Subject Category 76 RTOP 505-33-33)
277. Yost, W. T.; Cantrell, John H., Jr.; and Breazeale, M. A.: Ultrasonic Nonlinearity Parameters and Third-Order Elastic Constants of Copper Between 300 and 3°K. Journal of Applied Physics, Volume 52, Number 1, January 1981, p. 126-128.
(Avail: AIP Subject Category 76 RTOP 505-33-43)

Meeting/Conference Papers

278. Cantrell, John H., Jr.: Anharmonic Properties of Solids From Measurements of the Stress Acoustic Constant. Presented at the ASTM Symposium on Ultrasonic Measurements of Applied and Residual Stress, April 5-12, 1981, Philadelphia, Pennsylvania.
(Avail: ASTM Subject Category 76 RTOP 505-33-53)
279. Cantrell, John H., Jr.; and Chern, Engmin J.: Relative Slope Invariance of Velocity-Stress and Strain-Stress Curves. Presented at the 1981 IEEE International Ultrasonics Symposium, October 14-16, 1981, Chicago, Illinois.
(Avail: IEEE Subject Category 71 RTOP 505-33-23)
280. Cantrell, John H., Jr.; and Goans, Ronald E.: Determination of Threshold Temperature for Cutaneous Thermal Necrosis From Ultrasonic Burn Depth Measurements. Presented at the 1981 IEEE International Ultrasonics Symposium, October 14-16, 1981, Chicago, Illinois.
(Avail: IEEE Subject Category 71 RTOP 505-33-23)
281. Chern, Engmin J.; Heyman, Joseph S.; and Cantrell, John H., Jr.: Determination of Material Stress From the Temperature Dependence of the Acoustic Natural Velocity. Presented at the 1981 IEEE International Ultrasonics Symposium, October 14-16, 1981, Chicago, Illinois.
(Avail: IEEE Subject Category 71 RTOP 505-33-23)
282. Claus, R. O.; and Cantrell, J. H., Jr.: DC Calibration of the Strain Sensitivity of a Single Mode Optical Fiber Interferometer. Presented at the SOUTHEASTCON '81 IEEE Region 3 Conference and Exhibit, April 6-8, 1981, Huntsville, Alabama.
(Avail: IEEE, Proceedings Subject Category 71 RTOP 505-33-53)
283. Claus, Richard O.; and Cantrell, John H., Jr.: Wideband Optical Measurements of Ultrasonic Pulses. Presented at the 1981 Ultrasonics International Conference and Exhibition, June 30-July 2, 1981, Brighton, United Kingdom.
(Avail: Ultrasonics International '81, Proceedings Subject Category 71 RTOP 505-33-53)
284. Edwards, S. Franklin: Langley Research Center Calibration/Metrology Status. Presented at the Fifth NASA Metrology/Calibration Workshop/NASA Metrology and Calibration - 1981, October 7-9, 1981, Estes Park, Colorado.
(Avail: NTIS Subject Category 35 RTOP 992-19-00)

285. Exton, R. J.; and Houghton, W. M.: Laser Remote Sensing of Marine Sediment Load and Algal Pigments: Laboratory Experiments. Presented at the Joint NOAA/NASA Symposium on Results of 1980 Chesapeake Bay Plume Study, January 21-23, 1981, Williamsburg, Virginia.
(Avail: NTIS, NASA CP-2188 Subject Category 48 RTOP 506-61-33)
286. Ferris, Alice T.; and Moore, Thomas C.: Force Instrumentation for Cryogenic Wind Tunnels. Presented at the Instrument Society of America's 27th International Instrumentation Symposium, April 27-30, 1981, Indianapolis, Indiana.
(Avail: ISA, Proceedings Subject Category 35 RTOP 505-31-63)
287. Hendricks, Herbert D.; Spencer, J. Larry; and Magee, Carl J.: Fiber Optic Wavelength Multiplexing for Civil Aviation Applications. Presented at the SPIE's 25th Annual Technical Symposium and Instrument Display, August 24-28, 1981, San Diego, California. SPIE Paper No. 296-18. SPIE Volume 296, p. 134-140.
(Avail: SPIE Subject Category 08 RTOP 505-34-43)
288. Hess, Robert V.: CO₂ Lidar for Measurement of Trace Gases and Wind Velocities. Presented at the SPIE's 25th Annual Technical Symposium and Instrument Display, August 24-28, 1981, San Diego, California. SPIE Paper No. 300-05, Volume 300, 13 p.
(Avail: SPIE Subject Category 36 RTOP 506-61-33)
289. Heyman, Joseph S.: Ultrasonic Measurements of Axial Stress. Presented at the Society for Experimental Stress Analysis Fall Meeting, October 11-14, 1981, Keystone, Colorado.
(Avail: SESA Subject Category 71 RTOP 505-33-23)
290. Heyman, Joseph S.: Determination of Critical Fastener Preload With Ultrasonics. Presented at the 30th Defense Conference on Nondestructive Testing (NDT), November 3-5, 1981, Hampton, Virginia.
(Avail: DOD Subject Category 71 RTOP 505-33-23)
291. Heyman, Joseph S.; and Chern, Engmin J.: Ultrasonic Measurements of Axial Stress. Presented at the ASTM Symposium on Ultrasonic Measurements of Applied and Residual Stress, April 5-12, 1981, Philadelphia, Pennsylvania.
(Avail: ASTM Subject Category 71 RTOP 505-33-23)
292. Heyman, Joseph S.; and Chern, Engmin J.: Characterization of Heat Treatment in Aluminum Based on Ultrasonic Determination of the Second and Third Order Elastic Constants. Presented at the 1981 IEEE International Ultrasonics Symposium, October 14-16, 1981, Chicago, Illinois.
(Avail: IEEE Subject Category 71 RTOP 505-33-23)
293. Hoell, J. M.; Harward, C. N.; Bair, C. H.; and Williams, B. S.: Ozone Air Broadening Coefficients in the 9 μ m Region. Presented at the Conference on Optics '81, April 7-10, 1981, Santa Fe, New Mexico. SPIE Volume 288, p. 376-382.
(Avail: SPIE Subject Category 72 RTOP 506-61-33)

294. Hoell, James M., Jr.; Harward, Charles N.; and Lo, Wayne: High Resolution Atmospheric Spectroscopy Using a Diode Laser Heterodyne Spectrometer. Presented at the Society of Photo-Optical Instrumentation Engineers Technical Symposium East '81, April 20-24, 1981, Washington, D.C. SPIE Paper No. 277-15, Volume 277, p. 77-85.
(Avail: SPIE Subject Category 35 RTOP 506-61-33)
295. Hoell, James M., Jr.; Levine, Joel S.; Augustsson, Tommy R.; and Harward, Charles N.: Atmospheric Ammonia: Measurements and Modeling. Presented at the AIAA 19th Aerospace Sciences Meeting, January 12-15, 1981, St. Louis, Missouri, AIAA Paper No. 81-0376.
(Avail: AIAA Subject Category 46 RTOP 146-20-10)
296. Kantsios, Andronicos G.: Progress on ASTM Practice on Thermographic Inspections of Wood Frame Buildings. Presented at the International Conference on Thermal Infrared Sensing Applied to Energy Conservation in Building Envelopes (Thermosense IV), September 1-4, 1981, Ontario, Canada. SPIE Paper No. 313-14.
(Avail: SPIE Subject Category 35 RTOP 506-53-33)
297. Moffett, D.; Rayborn, G. H.; Singh, J. J.; and Wood, G. M.: The Effect of Transverse Magnetic Field on Electrons in a 30° Parallel Plate Analyzer. Presented at the General Meeting of American Physical Society, November 23-25, 1981, New Orleans, Louisiana, BAPS, 26, 1205, 1981.
(Avail: APS Subject Category 35 RTOP 505-33-33)
298. Ringermacher, H. I.; and Heyman, J. S.: Observation of a Sono-Acoustic Effect Using Piezoelectric Thermo-Acoustic Detection. Presented at the 1981 IEEE International Ultrasonics Symposium, October 14-16, 1981, Chicago, Illinois.
(Avail: IEEE Subject Category 71 RTOP 505-33-23)
299. Rogowski, Robert S.; Schryer, David R.; Cofer, Wesley R., III; Edahl, Robert A., Jr.; and Munivalli, Shekhar: The Oxidation of SO₂ by NO₂ and Air in an Aqueous Suspension of Carbon. Presented at the Workshop/Conference on Heterogeneous Catalysis - Its Importance to Atmospheric Chemistry, June 29-July 3, 1981, Albany, New York.
(Avail: AGU Geomonograph 27 Subject Category 45 RTOP 146-20-10)
300. Singh, J. J.; Smith, A. C.; and Yue, G. K.: Ion-Induced Binary Nucleation Studies. Presented at the General Meeting of the American Physical Society, March 16-20, 1981, Phoenix, Arizona, BAPS 26, 22, 1981.
(Avail: APS Subject Category 45 RTOP 307-91-00)
301. Wood, George M.; Rayborn, Grayson H.; Ioup, Juliette W.; Ioup, George E.; and Upchurch, Billy T.: Data Enhancement and Analysis Through Mathematical Deconvolution of Signals From Scientific Measuring Instruments. Presented at the 1981 International Congress on Instrumentation in Aerospace Simulation Facilities (ICIASF), September 30-October 2, 1981, Dayton, Ohio.
(Avail: IEEE Subject Category 09 RTOP 505-33-23)

302. Wright, Robert E., Jr.; Kantsios, Andronicos G.; and Henley, William C.: The Effect of Mounting on the Performance of Surface Heat Flow Meters Used to Evaluate Building Heat Losses. Presented at the DOE-ORNL/ASTM Conference on Thermal Insulations, Materials, and Systems for Energy Conservation in the '80s, December 8-10, 1981.
(Avail: ASTM, Proceedings (Pending) Subject Category 35
RTOP 506-53-33)
303. Zuckerwar, Allan J.: Acoustic Ground Impedance Meter. Presented at the 102nd Meeting of the Acoustical Society of America, November 30-December 4, 1981, Miami Beach, Florida.
(Avail: NTIS, NASA TM-83227 Subject Category 35 RTOP 505-32-03)

Computer Programs

304. Faulcon, Nettie D.; and Monteith, James H.: A Computer Controlled Instrumentation System for Third-Octave Analysis. Program No. LAR-12436. NASA Accession No. M80-10065. Released 1981.
(Avail: COSMIC Subject Category 71)
305. Singh, Jag J. (Langley Research Center); and Mall, Gerald H. (Computer Sciences Corp.): POSTRN: Program for Calculating Energy and Transit Times of Positrons. Program No. LAR-12707. Accession No. M80-10033. Released 1981.
(Avail: COSMIC Subject Category 72)
306. Zuckerwar, Allan J. (Old Dominion University Research Foundation): Theoretical Response of Condenser Microphones. Program No. LAR-12684. NASA Accession No. M80-10024. Released 1981.
(Avail: COSMIC Subject Category 32)

Tech Briefs

307. Adams, Richard R.; MacConochie, Ian O.; and Poole, Bordie D., Jr.: Miniature Personal UV Solar Dosimeter. NASA Tech Brief LAR-12469. Released 1981.
(Avail: NASA Langley Technology Utilization Office
Category: Physical Sciences)
308. Cantrell, John H., Jr.; and Heyman, Joseph S.: Ultrasonic Frequency Analysis. NASA Tech Brief LAR-12697. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)
309. Edwards, Howard B.: Four-Wheel Dual Braking for Automobiles. NASA Tech Brief LAR-12687. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Machinery)
310. Franke, John M.; and Gartrell, Luther R.: Noise Suppression in Forward-Scattering Optical Instruments. NASA Tech Brief LAR-12730. Released 1981.
(Avail: NASA Langley Technology Utilization Office
Category: Physical Sciences)

311. Franke, John M.; and Rhodes, David B.: Fiber-Optics Couple Arthroscope to TV. NASA Tech Brief LAR-12718. Released 1981.
(Avail: NASA Langley Technology Utilization Office
Category: Life Sciences)
312. Gross, Chris; and Basta, Thaddeus, Jr.: Self-Correcting Electronically-Scanned Pressure Sensor. NASA Tech Brief LAR-12686. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)
313. Heyman, Joseph S.; and Stone, Francis D.: Pulsed Phase-Locked-Loop Strain Monitor. NASA Tech Brief LAR-12772. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)
314. Moore, Thomas C.: Matching of Apparent-Strain Characteristics. NASA Tech Brief LAR-12743. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)
315. Russ, Courtney E., Jr.: Gas-Laser Power Monitor. NASA Tech Brief LAR-12682. Released 1981.
(Avail: NASA Langley Technology Utilization Office
Category: Physical Sciences)
316. Singh, Jag J. (Langley Research Center); Holt, William H. (Naval Surface Weapons Center); and Mock, Willis, Jr. (Naval Surface Weapons Center): Moisture in Composites is Measured by Positron Lifetime. NASA Tech Brief LAR-12776. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)
317. Singh, Jag J.; Wood, George M., Jr. (Langley Research Center); Rayborn, Grayson H. (University of Southern Mississippi); and White, Frederick A. (Rensselaer Polytechnic Institute): Improved LEEM Ranges Over Four Decades. NASA Tech Brief LAR-12706. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)

Patents

318. Franke, John M.: Direction Sensitive Laser Velocimeter. U.S. Patent 4,255,048. Issued 1981.
(Avail: U.S. Patent & Trademark Office Subject Category 36)

Oral Presentations to Conferences/Workshops

319. Bryant, Charles S.: NASA Extended FORTRAN '78 System Status Report. Presented at the Seventh Annual North American Muse Meeting, December 10-13, 1981, Fort Lauderdale, Florida.
320. Cantrell, John H., Jr.: Fatigue Damage in Graphite/Epoxy Composites. Presented at the 30th Defense Conference on Nondestructive Testing (NDT), November 3-5, 1981, Hampton, Virginia.
321. Cantrell, John H., Jr.: Characterization of Molecular Binding From Ultrasonic Nonlinearity Parameters. Presented at the 102nd Meeting of the Acoustical Society of America, November 30-December 4, 1981, Miami Beach, Florida.

322. Cantrell, John H., Jr.; and Goans, Ronald E.: Ultrasonic Measurement of Threshold Temperature for Irreversible Cutaneous Burns. Presented at the 101st Meeting of the Acoustical Society of America, May 18-22, 1981, Ottawa, Ontario, Canada.
323. Cheo, P. K.; and Sachse, G. W.: A Tunable Integrated Optical Source for the Infrared. Presented at the Conference on Optics '81, April 7-10, 1981, Santa Fe, New Mexico.
324. Heyman, Joseph S.: Nondestructive Evaluation Research at Langley. Presented at the Nondestructive Testing Information Analysis Center, DOD 13th Symposium on Nondestructive Evaluation, April 21-23, 1981, San Antonio, Texas.
325. Heyman, Joseph S.: Elasto-Acoustic Method for Residual Stress Measurement. Presented at the DOT Symposium on Residual Stress, June 16-17, 1981, Cambridge, Massachusetts.
326. Heyman, Joseph S.: Advanced Non-Destructive Materials Characterization. Presented at the AIAA/NASA Seminar on Advanced Materials Processing and Related Technologies, October 6-7, 1981, Hampton, Virginia.
327. Holmes, Harlan K.: Non-Contacting Lifting Device for Materials Inspection and Handling. Presented at the AIAA/NASA Seminar on Advanced Materials Processing and Related Technologies, October 6-7, 1981, Hampton, Virginia.
328. Jafri, J. A.; Phillips, Donald H.; and Lengsfeld, Byron H., III: The Lower Valence States of the FO Radical. Presented at the American Conference on Theoretical Chemistry, June 22-26, 1981, Boulder, Colorado.
329. Phillips, Donald H.: The Frozen Orbital Approximation in Ab-Initio Calculations on Complex Physical Systems. Presented at the General Meeting of the American Physical Society, March 16-20, 1981, Phoenix, Arizona.
330. Upchurch, Billy T.; and Wood, George M.: Dumas and Pregl Revisited With Mass Spectrometry. Presented at the 1981 Annual Meeting of the Virginia Academy of Science, May 12-15, 1981, Norfolk, Virginia.
331. Winfree, William P.: Phase Insensitive Measurements of Ultrasonic Attenuation. Presented at the 30th Defense Conference on Nondestructive Testing (NDT), November 3-5, 1981, Hampton, Virginia.
332. Wood, George M.; Upchurch, Billy T.; Hoyt, Ronald F.; and Paulin, Patricia A.: Mass Spectrometric Observations of the α Oxidation Fate of Carbon Compounds Over Heated Copper (II) Oxide. Presented at the ASMS 29th Annual Conference on Mass Spectrometry and Allied Topics, May 24-29, 1981, Minneapolis, Minnesota.
333. Zuckerwar, Allan J.; and Griffin, William A.: Vibrational-Rotational Energy Transfer in Mixtures of Nitrogen and Water Vapor. Presented at the 101st Meeting of the Acoustical Society of America, May 18-22, 1981, Ottawa, Ontario, Canada.

PUBLICATIONS FOR TERMINAL CONFIGURED VEHICLE PROGRAM OFFICE

Formal Reports

334. White, William F.; and Clark, Leonard V.: Operational Considerations in Utilization of Microwave Landing System Approach and Landing Guidance. NASA TM-81945, March 1981, 30 p.
(Avail: NTIS Subject Category 04 RTOP 534-04-62)

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

335. Thompson, A. D.; Stapleton, B. P.; Walen, D. B.; Rieder, P. F.; and Moss, D. G.: MLS - Airplane System Modeling. (NAS1-14880 Boeing Commercial Airplane Company.) NASA CR-165700, April 1981, 131 p.
(Avail: NTIS Subject Category 04 RTOP 534-04-13)

Journal Articles and Periodical Literature

No journal articles and periodical literature.

Meeting/Conference Papers

No meeting/conference papers.

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

Oral Presentations to Conferences/Workshops

No oral presentations to conferences/workshops.

PUBLICATIONS FOR OFFICE OF DIRECTOR FOR STRUCTURES

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Periodical Literature

No journal articles and periodical literature.

Meeting/Conference Papers

No meeting/conference papers.

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

Oral Presentations to Conferences/Workshops

No oral presentations to conferences/workshops.

PUBLICATIONS FOR MATERIALS DIVISION

Formal Reports

336. Crews, John H., Jr.; Hong, C. S.; and Raju, I. S.: Stress-Concentration Factors for Finite Orthotropic Laminates With a Pin-Loaded Hole. NASA TP-1862, May 1981, 40 p.
(Avail: NTIS Subject Category 24 RTOP 506-53-23)
337. *Farley, Gary L.: Effects of Static Tensile Load on the Thermal Expansion of Gr/PI Composite Material. NASA TP-1867, AVRADCOM TR 81-B-2, June 1981, 32 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)
338. Ferl, James E.; and Long, Edward R., Jr.: Low-Energy Electron Effects on Tensile Modulus and Infrared Transmission Properties of a Polypyromellitimide Film. NASA TM-81977, June 1981, 16 p.
(Avail: NTIS Subject Category 27 RTOP 506-53-23)
339. Murthy, M. V. V.: An Improved Transverse Shear Deformation Theory for Laminated Anisotropic Plates. NASA TP-1903, November 1981, 37 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-33)

Quick-Release Technical Memorandums

340. Bigelow, C. A.: An Assessment of Buffer Strips for Improving Damage Tolerance of Composite Laminates at Elevated Temperature. NASA TM-83257, December 1981, 13 p.
(Avail: NTIS Subject Category 24 RTOP 506-53-23)
341. Burks, Harold D.; Nelson, James B.; and Price, Howard L.: Flow Properties of a Series of Experimental Thermoplastic Polyimides. NASA TM-83115, April 1981, 27 p.
(Avail: NTIS Subject Category 27 RTOP 505-33-33)
342. Landis, H. S.; Unnam, J.; Brewer, W. D.; and Naidu, S. V. N.: Modification of Silicon Carbide Fibers for Use in SiC/Ti Composites. NASA TM-83122, April 1981, 16 p.
(Avail: NTIS Subject Category 24 RTOP 506-53-23)
343. Newman, J. C., Jr.: A Crack-Closure Model for Predicting Fatigue-Crack Growth Under Aircraft Spectrum Loading. NASA TM-81941, January 1981, 61 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-23)
344. Newman, J. C., Jr.: Prediction of Fatigue-Crack Growth Under Variable-Amplitude and Spectrum Loading Using a Closure Model. NASA TM-81942, January 1981, 36 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-23)

*Army Structures Laboratory. USARTL (AVRADCOM)

345. Newman, J. C., Jr.; and Raju, I. S.: Stress-Intensity Factor Equations for Cracks in Three-Dimensional Finite Bodies. NASA TM-83200, August 1981, 50 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-23)
346. *O'Brien, T. Kevin: Characterization of Delamination Onset and Growth in a Composite Laminate. NASA TM-81940, January 1981, 60 p.
(Avail: NTIS Subject Category 24 RTOP 506-53-23)
347. Phillips, Edward P.: Tension-Tension Fatigue Behavior of the Space Shuttle Strain-Isolation-Pad Material. NASA TM-83183, August 1981, 46 p.
(Avail: NTIS Subject Category 39 RTOP 506-89-01)
348. Poe, C. C., Jr.: A Single Fracture Toughness Parameter for Fibrous Composite Laminates. NASA TM-81911, March 1981, 48 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-33)
349. St. Clair, Anne K.; and St. Clair, Terry L.: A Review of High-Temperature Adhesives. NASA TM-83141, July 1981, 21 p.
(Avail: NTIS Subject Category 27 RTOP 505-33-33)
350. St. Clair, Anne K.; St. Clair, Terry L.; and Ezzell, Stephen A.: The Effect of Elastomer Chain Length on Properties of Silicone-Modified Polyimide Adhesives. NASA TM-83172, August 1981, 13 p.
(Avail: NTIS Subject Category 27 RTOP 505-33-33)
351. St. Clair, Terry L.: Recent Developments in Polyimide Adhesives at NASA-Langley Research Center. NASA TM-81936, January 1981, 12 p.
(Avail: NTIS Subject Category 27 RTOP 505-33-33)
352. St. Clair, Terry L.; and Progar, Donald J.: A Novel Addition Polyimide Adhesive. NASA TM-81976, March 1981, 10 p.
(Avail: NTIS Subject Category 27 RTOP 505-33-33)
353. Stroud, C. W.; and Rummler, Donald R.: Mass Loss of TEOS-Coated RCC Subjected to the Environment at the Shuttle Wing Leading Edge. NASA TM-83203, September 1981, 58 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-23)
354. Whitcomb, John D.: Finite Element Analysis of Instability-Related Delamination Growth. NASA TM-81964, March 1981, 44 p.
(Avail: NTIS Subject Category 24 RTOP 506-53-23)
355. Whitcomb, John D.: Approximate Analysis of Postbuckled Through-Width Delaminations. NASA TM-83147, June 1981, 30 p.
(Avail: NTIS Subject Category 24 RTOP 506-53-23)
356. Young, Philip R.: Characterization of Initial Cure Reactions in Propargyl and Nadic End Capped Model Compounds. NASA TM-83192, August 1981, 25 p.
(Avail: NTIS Subject Category 23 RTOP 505-33-33)

Contractor Reports

357. Arvin, G. H.; Israeli, L.; Stolpestad, J. H.; and Stacher, G. W.: Evaluation of Superplastic Forming and Co-Diffusion Bonding of Ti-6Al-4V Titanium Alloy Expanded Sandwich Structures. (NAS1-15788 Rockwell International Corporation.) NASA CR-165827, September 1981, 134 p.
(Avail: NTIS Subject Category 26 RTOP 533-01-13)
358. Bourland, G.; and Cox, R. L.: Evaluation of Non-Specular Reflecting Silvered Teflon and Filled Adhesives. (NAS1-14672 Vought Corporation.) NASA CR-165657, September 1981, 36 p.
(Avail: NTIS Subject Category 27 RTOP 506-53-23)
359. Delale, F.; and Erdogan, F.: Time-Temperature Effect in Adhesively Bonded Joints. (NGR 39-007-011 Lehigh University.) NASA CR-165775, February 1981, 32 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-23)
360. Delale, F.; and Erdogan, F.: The Crack Problem for a Half Plane Stiffened by Elastic Cover Plates. (NGR 39-007-011 Lehigh University.) NASA CR-165776, February 1981, 35 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-23)
361. Delale, F.; and Erdogan, F.: Application of the Line-Spring Model to a Cylindrical Shell Containing a Circumferential or Axial Part-Through Crack. (NGR 39-007-011 Lehigh University.) NASA CR-164058, April 1981, 32 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-23)
362. DeIasi, Richard J.; and Schulte, Robert L.: Experimental Determination of the Effects of Moisture on Composite-to-Composite Adhesive Joints. (NAS1-15634 Grumman Aerospace Corporation.) NASA CR-3387, February 1981, 67 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)
363. Elrod, S. D.: Service Evaluation of Aluminum-Brazed Titanium (ABTi). (NAS1-13681 Boeing Commercial Airplane Company.) NASA CR-3418, May 1981, 41 p.
(Avail: NTIS Subject Category 25 RTOP 533-01-13)
364. Frost, R. K.; Jones, J. S.; Dynes, P. J.; and Wykes, D. H.: Development and Demonstration of Manufacturing Processes for Fabricating Graphite/LARC-160 Polyimide Structural Elements. (NAS1-15371 Rockwell International Corporation.) NASA CR-165809, December 1981, 498 p.
(Avail: NTIS Subject Category 24 RTOP 506-53-23)
365. Gibbins, Martin N.: Environmental Exposure Effects on Composite Materials for Commercial Aircraft - Eleventh Quarterly Progress Report. (NAS1-15148 Boeing Commercial Airplane Company.) NASA CR-165845, June 1981, 29 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)
366. Goree, James G.; Dharani, Lokeswarappa R.; and Jones, Walter F.: Mathematical Modeling of Damage in Unidirectional Composites. (NSG-1297 Clemson University.) NASA CR-3453, August 1981, 101 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)

367. Hoffman, Daniel J.: Environmental Exposure Effects on Composite Materials for Commercial Aircraft - Tenth Quarterly Progress Report. (NAS1-15148 Boeing Commercial Airplane Company.) NASA CR-165765, March 1981, 38 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-23)
368. Humphreys, E. A.: Development of an Engineering Analysis of Progressive Damage in Composites During Low Velocity Impact. (NAS1-15888 Materials Sciences Corporation.) NASA CR-165778, July 1981, 123 p.
(Avail: NTIS Subject Category 24 RTOP 506-53-23)
369. Hyer, M. W.; and Liu, D. H.: Use of Two-Dimensional Transmission Photoelastic Models to Study Stresses in Double-Lap Bolted Joints. (NSG-1621 Virginia Polytechnic Institute and State University.) NASA CR-165812, November 1981, 110 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-33)
370. Kizer, J. A.: Program for Establishing Long-Time Flight Service Performance of Composite Materials in the Center Wing Structure of C-130 Aircraft, Phase V - Flight Service and Inspection. (NAS1-11100 Lockheed-Georgia Company.) NASA CR-165770, October 1981.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)
371. Kray, R. J.: Development of New Addition-Type Composite Resins. (NAS1-13703 CIBA-GEIGY Corporation.) NASA CR-3276, April 1981, 163 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)
372. Kurland, Richard M.; Thomasson, James F.; and Beggs, William C.: Radiation Testing of Composite Materials, In Situ Versus Ex Situ Effects. (NAS1-15848 TRW Defense and Space Systems Group.) NASA CR-3475, November 1981, 108 p.
(Avail: NTIS Subject Category 24 RTOP 506-53-23)
373. Liebowitz, Harold; and Jones, Douglas L.: Biaxial Tests of Flat Graphite/Epoxy Laminates. (NSG-1289 The George Washington University.) NASA CR-165793, October 1981, 106 p.
(Avail: NTIS Subject Category 24 RTOP 506-53-23)
374. Maximovich, M.; Wereta, A.; and Galeas, R.: Chemical and Rheological Evaluation of Polyimides. (NAS1-16287 Lockheed Missiles and Space Company, Inc.) NASA CR-165817, 1981.
(Avail: NTIS (Pending) Subject Category 24 RTOP 505-33-33)
375. Phelps, M. L.: In-Service Inspection Methods for Graphite-Epoxy Structures on Commercial Transport Aircraft. (NAS1-15304 Boeing Commercial Airplane Company.) NASA CR-165746, November 1981, 104 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)
376. Prewo, K. M.; and Thompson, E. R.: Research on Graphite Reinforced Glass Matrix Composites. (NAS1-14346 United Technologies Research Center.) NASA CR-165711, May 1981, 147 p.
(Avail: NTIS Subject Category 24 RTOP 506-53-23)
377. Ramkumar, R. L.: Fatigue Degradation in Compressively Loaded Composite Laminates. (NAS1-15956 Northrop Corporation.) NASA CR-165681, April 1981, 150 p.
(Avail: NTIS Subject Category 24 RTOP 506-53-23)

378. Reese, Charles; and Sorem, James, Jr.: Statistical Distribution of Mechanical Properties for Three Graphite-Epoxy Material Systems. (NSG-1281 The University of Kansas Center for Research, Inc.) NASA CR-165736, July 1981, 279 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)
379. Rosen, B. Walter; Nagarkar, Aniruddha P.; and Hashin, Zvi: Thermomechanical Response of Gr/Pi Composites. (NAS1-15841 Materials Sciences Corporation.) NASA CR-165753, March 1981, 102 p.
(Avail: NTIS Subject Category 24 RTOP 506-53-23)
380. Smith, C. V.; Markham, J. W.; Kelley, J. W.; and Kathiresan, K.: Development of an Orthotropic Hole Element. (NAS1-15840 Lockheed-Georgia Company.) NASA CR-165759, August 1981, 137 p.
(Avail: NTIS Subject Category 24 RTOP 506-53-23)
381. Stone, R. H.: Flight Service Evaluation of Kevlar-49 Epoxy Composite Panels in Wide-Bodies Commercial Transport Aircraft - Seventh Annual Flight Service Report. (NAS1-11621 Lockheed-California Company.) NASA CR-165733, April 1981, 32 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)
382. Tanimoto, E. Y.: Effects of Long-Term Exposure to Fuels and Fluids on Behavior of Advanced Composite Materials. (NAS1-12428 Boeing Commercial Airplane Company.) NASA CR-165763, August 1981, 37 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)
383. Tennyson, R. C.: Application of the Cubic Strength Criterion to the Failure Analysis of Composite Structures. (NSG-7409 University of Toronto.) NASA CR-165712, May 1981, 83 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)

Journal Articles and Periodical Literature

384. Bell, Vernon L.; Kilzer, L.; Hett, E. M.; and Stokes, George M.: Polyimide Structure-Property Relationships. III. Polyimides From Multi-Ring Diamines. Journal of Applied Polymer Science, Polymer Chemistry Edition, Volume 26, November 1981, p. 3805-3817.
(Avail: John Wiley & Sons, Inc. Subject Category 27 RTOP 505-33-33)
385. Bowles, D. E.; Post, D.; Herakovich, C. T.; and Tenney, D. R.: Moiré Interferometry for Thermal Expansion of Composites. Experimental Mechanics, Volume 21, Number 12, December 1981, p. 441-447.
(Avail: SESA Subject Category 24 RTOP 506-53-23)
386. Crews, John H., Jr.: Bolt-Bearing Fatigue of a Graphite/Epoxy Laminate. ASTM STP 749, Joining of Composite Materials, edited by K. T. Kedward, 1981, p. 131.
(Avail: ASTM Subject Category 24 RTOP 506-53-53)

387. Danieleley, Ned D.; and Long, Edward R., Jr.: Effects of Curing on the Glass Transition Temperature and Moisture Absorption of a Neat Epoxy Resin. Journal of Polymer Science, Volume 19, 1981, p. 2443-2449.
(Avail: John Wiley & Sons, Inc. Subject Category 23 RTOP 506-53-23)
388. Dvorak, G. J.; and Johnson, W. S.: Fatigue of Metal Matrix Composites. International Journal of Fracture, Volume 16, Number 6, December 1980 (released in 1981), p. 585-607.
(Avail: Sijthoff & Noordhoff International Subject Category 24 RTOP 505-33-33)
389. Dvorak, G. J.; and Johnson, W. S.: Fatigue Mechanisms in Metal Matrix Composite Laminates. 1981 Advances in Aerospace Structures and Materials, AD-01, American Society of Mechanical Engineers, November 1981, p. 21-34.
(Avail: ASME Subject Category 39 RTOP 505-33-33)
390. Ferl, James E.; and Long, Edward R., Jr.: Infrared Spectroscopic Analysis of the Effects of Simulated Space Radiation on a Polyimide. IEEE Transactions on Nuclear Science, Volume NS-28, Number 6, December 1981, p. 4119-4124.
(Avail: IEEE Subject Category 23 RTOP 505-33-23)
391. Hergenrother, Paul M.: Polyphenylquinoxalines Containing Ethynyl Groups. Macromolecules, Volume 14, July/August 1981, p. 891-897.
(Avail: ACS Subject Category 27 RTOP 505-33-33)
392. Hergenrother, Paul M.: Polyphenylquinoxalines Containing Phenylethynyl Groups. Macromolecules, Volume 14, July/August 1981, p. 898-904.
(Avail: ACS Subject Category 27 RTOP 505-33-33)
393. Hergenrother, Paul M.: Adhesive and Composite Evaluation of Acetylene-Terminated Phenylquinoxaline Resins. Polymer Engineering and Science, Volume 21, November 1981, p. 1072-1077.
(Avail: SPE Subject Category 27 RTOP 505-33-33)
394. Johnson, W. S.: Multi-Parameter Yield Zone Model for Predicting Spectrum Crack Growth. ASTM STP 748, Methods and Models for Predicting Fatigue Crack Growth Under Random Loading, edited by J. B. Chang and C. M. Hudson, 1981, p. 85.
(Avail: ASTM Subject Category 39 RTOP 506-53-53)
395. Landis, H. S.; Unnam, J.; Brewer, W. D.; and Naidu, S. V. N.: Effects of Metal Coatings on Silicon Carbide Fiber Strengths. SAMPE Quarterly, Volume 12, Number 4, July 1981, p. 19-23.
(Avail: SAMPE Subject Category 24 RTOP 506-53-23)
396. Newman, J. C., Jr.: A Crack-Closure Model for Predicting Fatigue-Crack-Growth Under Aircraft Spectrum Loading. ASTM STP 748, Methods and Models for Predicting Fatigue Crack Growth Under Random Loading, edited by J. B. Chang and C. M. Hudson, 1981, p. 53-84.
(Avail: ASTM Subject Category 39 RTOP 505-33-23)
397. Newman, J. C., Jr.; and Raju, I. S.: Stress-Intensity Factors for Internal Surface Cracks in Cylindrical Pressure Vessels. ASME Journal of Pressure Vessel Technology, Volume 102, November 1980, p. 342-346.
(Avail: ASME Subject Category 39 RTOP 506-17-23)

398. Newman, J. C., Jr.: Stress-Intensity Factors and Crack-Opening Displacements for Round Compact Specimen. International Journal of Fracture, Volume 17, Number 6, December 1981, p. 567-578.
(Avail: Sijthoff & Noordhoff Int'l. Publishers Subject Category 39
RTOP 506-53-53)
399. Newman, J. C.; and Raju, I. S.: An Empirical Stress-Intensity Factor Equation for the Surface Crack. Engineering Fracture Mechanics, Volume 15, Numbers 1-2, 1981, p. 185-192.
(Avail: Pergamon Press Ltd. Subject Category 39 RTOP 506-53-53)
400. *O'Brien, Kevin; and Reifsnider, Kenneth L.: Fatigue Damage Evaluation Through Stiffness Measurements in Boron-Epoxy Laminates. Journal of Composite Materials, Volume 15, Number 1, January 1981, p. 55-70.
(Avail: Technomic Pub. Co. Subject Category 24 RTOP 506-53-53)
401. Orwoll, Robert A.; St. Clair, Terry L.; and Dobbs, Kerwin D.: Phase Behavior of Some Polyamic Acid + Ether Systems. Journal of Polymer Science, Polymer Physics Edition, Volume 19, Number 9, September 1981, p. 1385-1393.
(Avail: John Wiley & Sons Subject Category 27 RTOP 505-33-33)
402. Phelps, Henry R.; and Long, Edward R., Jr.: Property Changes of a Graphite/Epoxy Composite Exposed to Nonionizing Space Parameters. Journal of Composite Materials, Volume 14, October 1980, p. 334-341.
(Avail: Technomic Pub. Co. Subject Category 24 RTOP 506-53-23)
403. Phillips, Edward P.: Effects of Truncation of a Predominantly Compression Load Spectrum on the Life of a Notched Graphite/Epoxy Laminate. ASTM STP 723, Fatigue of Fibrous Composite Materials, 1981, p. 197.
(Avail: ASTM Subject Category 24 RTOP 506-17-23)
404. Raju, I. S.; and Crews, John H., Jr.: Interlaminar Stress Singularities at a Straight Free Edge in Composite Laminates. Journal of Computers and Structures, Volume 14, Numbers 1-2, 1981, p. 21-28.
(Avail: Pergamon Press Ltd. Subject Category 24 RTOP 506-53-53)
405. St. Clair, A. K.; and Taylor, L. T.: Incorporation of Metal Related Materials Into Electrically Neutral Polymers. Journal of Macromolecular Science-Chemistry, Volume A16, Number 1, 1981, p. 95-137.
(Avail: Marcel Dekker, Inc. Subject Category 27 RTOP 505-33-33)
406. St. Clair, Anne K.; and St. Clair, Terry L.: Addition Polyimide Adhesives Containing ATBN and Silicone Elastomers. International Journal of Adhesion and Adhesives, Volume 1, Number 5, July 1981, p. 249-255.
(Avail: IPC Science & Tech. Press Subject Category 27 RTOP 505-33-33)
407. St. Clair, Anne K.; and St. Clair, Terry L.: A Multi-Purpose Thermoplastic Polyimide. SAMPE Quarterly, Volume 13, Number 1, October 1981, p. 20-25.
(Avail: SAMPE Subject Category 27 RTOP 505-33-33)

408. Unnam, J.; and Tenney, D. R.: Effect of Zone-Size on the Convergence of Exact Solutions for Diffusion in Single Phase Systems with Planar, Cylindrical, or Spherical Geometry. Metallurgical Transactions - A, Volume 12A, August 1981, p. 1369-1372.
(Avail: Carnegie-Mellon University Subject Category 26
RTOP 506-53-33)
409. Whitcomb, John D.: Experimental and Analytical Study of Fatigue Damage in Notched Graphite/Epoxy Laminates. ASTM STP 723, Fatigue of Fibrous Composite Materials, 1981, p. 48-63.
(Avail: ASTM Subject Category 24 RTOP 506-17-23)
410. Whitcomb, John D.: Finite-Element Analysis of Instability-Related Delamination Growth. Journal of Composite Materials, Volume 15, September 1981, p. 403-426.
(Avail: Technomic Pub. Co. Subject Category 24 RTOP 506-53-23)

Meeting/Conference Papers

411. Baucom, Robert M.; and Kidder, Paul W.: Effect of Storing B-Staged Graphite/Polymide on Fabrication of Structural Elements. Presented at the 26th National SAMPE Symposium and Exhibition, April 28-30, 1981, Los Angeles, California.
(Avail: SAMPE Subject Category 27 RTOP 533-01-13)
412. Bowles, D. E.: The Effect of Microcracking on the Thermal Expansion of Graphite-Epoxy Composites. Presented at the Third Annual Large Space Systems Technology Review, November 16-19, 1981, Hampton, Virginia.
(Avail: NTIS, NASA CP-2215 Subject Category 24 RTOP 506-53-23)
413. Bowles, D. E.; Post, D.; Herakovich, C. T.; and Tenney, D. R.: Moiré Interferometry for Thermal Expansion of Composites. Presented at the Society for Experimental Stress Analysis 1981 Spring Meeting, May 31-June 4, 1981, Dearborn, Michigan.
(Avail: SESA Subject Category 24 RTOP 506-53-23)
414. Deaton, Jerry W.: NASA's Repair Technology Program in Composite Materials. Presented at the International Workshop on Defense Applications of Advanced Repair Technology for Metal and Composite Structures, July 22-24, 1981, Washington, D.C.
(Avail: DOD, Proceedings Subject Category 24 RTOP 505-33-33)
415. Dexter, H. Benson: Durability of Commercial Aircraft and Helicopter Composite Structures. Presented at A Critical Review: Techniques for the Characterization of Composite Materials, June 8-10, 1981, Cambridge, Massachusetts.
(Avail: ONR Eastern/Central Regional Office, Proceedings (Pending)
Subject Category 24 RTOP 505-33-33)
416. Dexter, H. Benson: NASA Service Experience With Composite Components on Aircraft. Presented at the Workshop on Service-Experience of Advanced Composites on Aircraft Structure, October 14-15, 1981, WPAFB, Ohio.
(Avail: AFWAL, Proceedings (Pending) Subject Category 24
RTOP 505-33-33)

417. Dvorak, G. J.; and Johnson, W. S.: Fatigue Mechanisms in Metal Matrix Composite Laminates. Presented at the ASME Winter Annual Meeting, November 15-20, 1981, Washington, D.C.
(Avail: ASME Subject Category 24 RTOP 505-33-33)
418. Ezzell, Stephen A.; St. Clair, Anne K.; and St. Clair, Terry L.: Effect of Elastomer Chain Length on the Properties of Silicone-Modified Polyimides. Presented at the American Chemical Society 33rd Southeastern Regional Meeting, November 4-6, 1981.
(Avail: NTIS, NASA TM-83172 Subject Category 27 RTOP 505-33-33)
419. Ferl, James E.; and Long, Edward R., Jr.: Infrared Spectroscopic Analysis of the Effects of Simulated Space Radiation on a Polyimide. Presented at the 1981 IEEE Annual Conference on Nuclear and Space Radiation Effects, July 21-24, 1981, Seattle, Washington. Published in IEEE Transactions on Nuclear Science, Volume NS-28, Number 6, p. 4119-4124.
(Avail: IEEE Subject Category 23 RTOP 506-53-23)
420. Fornes, R. E.; Memory, J. D.; Gilbert, R. D.; and Long, E. R., Jr.: The Effect of Electron and Gamma Radiation on Epoxy-Based Materials. Presented at the Third Annual Large Space Systems Technology Review, November 16-19, 1981, Hampton, Virginia.
(Avail: NTIS, NASA CP-2215 Subject Category 24 RTOP 506-53-23)
421. Foye, Raymond L.; and *Hodges, W. Todd: Some Results From a Crash Energy Absorption Test For Evaluating Composite Fuselage Construction. Presented at the 37th American Helicopter Society Forum, May 17-20, 1981, New Orleans, Louisiana. AHS Paper No. 81-44.
(Avail: AHS, Proceedings Subject Category 24 RTOP 505-42-13)
422. Hergenrother, P. M.: Polyphenylquinoxalines Containing Pendant Ethynyl Groups. Presented at the National American Chemical Society Meeting, March 29-April 3, 1981, Atlanta, Georgia.
(Avail: ACS Subject Category 27 RTOP 505-33-33)
423. Hergenrother, Paul M.: Crosslinking Polyphenylquinoxalines Via Phenylethynyl Groups. Presented at the American Chemical Society National Meeting, August 23-28, 1981, New York, New York.
(Avail: ACS Subject Category 27 RTOP 505-33-33)
424. Newman, J. C., Jr.: Review of Stress-Intensity Factor Solution Techniques. Presented at the ASTM Forum on Damage Tolerance Analysis, June 29, 1981, Los Angeles, California.
(Avail: ASTM STP (Pending) Subject Category 39 RTOP 505-33-23)
425. Newman, J. C., Jr.: Fatigue-Crack Propagation and Closure Under Variable-Amplitude Loading. Presented at the U.S.-Japan Seminar on Fracture Tolerance Evaluation, December 7-11, 1981, Honolulu, Hawaii.
(Avail: National Science Foundation Subject Category 39 RTOP 505-33-23)

426. Newman, J. C., Jr.; and Raju, I. S.: Stress-Intensity Factor Equations for Cracks in Three-Dimensional Finite Bodies. Presented at the ASTM 14th National Symposium on Fracture Mechanics, June 30-July 2, 1981, Los Angeles, California.
(Avail: ASTM, Volume on Fracture Mechanics (Pending)
Subject Category 39 RTOP 505-33-23)
427. *O'Brien, T. Kevin: An Approximate Stress Analysis for Delamination Growth in Unnotched Composite Laminates. Proceedings of the Sixth Annual Mechanics of Composites Review, AFWAL-TR-81-4001, February 1981, p. 95.
(Avail: AFWAL Subject Category 24 RTOP 506-53-53)
428. St. Clair, Anne K.; and St. Clair, Terry L.: A Multi-Purpose Thermoplastic Polyimide. Presented at the 26th National SAMPE Symposium and Exhibition, April 28-30, 1981, Los Angeles, California
(Avail: SAMPE Subject Category 27 RTOP 505-33-33)
429. St. Clair, Anne K.; St. Clair, Terry L.; Barie, W. P.; and Bakshi, K. R.: LARC-TPI, A High Temperature Insulating Film. Presented at the Fall Meeting of the Electrochemical Society--Organic Insulator Symposium, October 11-16, 1981, Denver, Colorado.
(Avail: Electrochemical Society, Proceedings Subject Category 27
RTOP 505-33-33)
430. St. Clair, Anne K.; St. Clair, Terry L.; Barie, Walter P., Jr.; and Bakshi, Kiran R.: LARC-TPI: A High Temperature Adhesive and Insulating Film. Presented at the Printed Circuit World Expo 1981, November 17-19, 1981, Woburn, Massachusetts.
(Avail: Worldwide Convention Management Co. Subject Category 27
RTOP 505-33-33)
431. St. Clair, Terry L.: Polyimide Adhesive Development at NASA-Langley Research Center. Presented at The Adhesive and Sealant Council's 1981 Spring Meeting, March 24, 1981, Indianapolis, Indiana.
(Avail: The Adhesive & Sealant Council Subject Category 27
RTOP 505-33-33)
432. Santos, Beatrice; and Sykes, George F.: Radiation Effects on Four Polysulfone Films. Presented at the 13th National SAMPE Technical Conference, October 13-15, 1981, Mt. Pocono, Pennsylvania.
(Avail: SAMPE Subject Category 27 RTOP 506-53-23)
433. Short, J. S.; Hyer, M. W.; Bowles, D. E.; and Tompkins, S. S.: Thermal Expansion of Gr/Ep Between 116 K and 366 K. Presented at the Third Annual Large Space Systems Technology Review, November 16-19, 1981.
(Avail: NTIS, NASA CP-2215 Subject Category 24 RTOP 506-53-23)
434. Whitcomb, John D.: Analysis of Instability-Related Delamination Growth. Proceedings of the Sixth Annual Mechanics of Composites Review, AFWAL-TR-81-4001, February 1981, p. 90.
(Avail: AFWAL Subject Category 24 RTOP 506-53-53)

Computer Programs

435. Whitcomb, John D.: NATP: The Numerical Analysis of Temperature Profiles. Program No. LAR-12649. NASA Accession No. M80-10059. Released 1981.
(Avail: COSMIC Subject Category 39)

Tech Briefs

436. Baucom, Robert M. (Langley Research Center); and Kidder, Paul W. (LTV): Hot Forming Graphite/Polyimide Structures. NASA Tech Brief LAR-12547. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Fabrication Technology)
437. Clark, Ronald K.; and Lisagor, W. Barry: Environmental Testing Under Load. NASA Tech Brief LAR-12602. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)
438. Davidson, John R.; and Heyman, Joseph S.: Electronically Calibratable Clock. NASA Tech Brief LAR-12654. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Electronic Components and Circuits)
439. Imig, Leland A.; and Gardner, Mickey R.: Temperature Controller Adapts to Fatigue Tester. NASA Tech Brief LAR-12393. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)
440. St. Clair, Anne K. (Langley Research Center); Furtsch, T. A.; and Taylor, L. T. (VPI & SU): Electrically-Conductive Palladium-Containing Polyimide Films. NASA Tech Brief LAR-12629. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Materials)
441. St. Clair, Anne K.; and St. Clair, Terry L.: Elastomer-Toughened Polyimide Adhesives. NASA Tech Brief LAR-12775. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Materials)
442. St. Clair, Anne K.; and St. Clair, Terry L. (Langley Research Center); and Taylor, Larry T. (VPI & SU): Aluminum Ions Enhance Polyimide Adhesive. NASA Tech Brief LAR-12640. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Materials)
443. Tenney, Darrel R. (Langley Research Center); and Unnam, Jalaiah (VPI & SU): Diffusion in Single-Phase Binary Alloys. NASA Tech Brief LAR-12665. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Materials)

Patents

444. Elber, Wolf: Method of Making a Partial Interlaminar Separation Composite System. U.S. Patent 4,274,901. Issued 1981.
(Avail: U.S. Patent & Trademark Office Subject Category 24)

445. St. Clair, Anne K.; St. Clair, Terry L.; and Taylor, Larry T.: Aluminum Ion-Containing Polyimide Adhesives. (NGT 47-003-029.) U.S. Patent 4,284,461. Issued 1981.
(Avail: U.S. Patent & Trademark Office Subject Category 27)
446. St. Clair, Terry L.; and Butler, John M.: Tackifier For Addition Polyimides Containing Monoethylphthalate. (NSG 428 Virginia Polytechnic Institute and State University.) U.S. Patent 4,281,102. Issued 1981.
(Avail: U.S. Patent & Trademark Office Subject Category 27)

Oral Presentations to Conferences/Workshops

447. Bales, Thomas T.: Weld Brazing of Super Plastic Formed Titanium. Presented at the AIAA/NASA Seminar on Advanced Materials Processing and Related Technologies, October 6-7, 1981, Hampton, Virginia.
448. Burks, Harold D.; Nelson, James B; and Price, Howard L.: Flow Properties of a Series of Thermoplastic Polyimides. Presented at the 52nd Annual Meeting of the Society of Rheology, Symposium on Polymer Processing, February 22-26, 1981, Williamsburg, Virginia.
449. Deaton, Jerry W.: NASA's Repair Technology Program in Composite Materials. Presented at the Steering Committee of the Joint Technical Coordinating Group on Aircraft Survivability, August 27, 1981, WPAFB, Dayton, Ohio.
450. Elber, Wolf: Captive Ball Impact Studies: Methods, Analysis, and Results for Graphite/Epoxy Plates. Presented at the Seventh Annual Mechanics of Composites Review, October 28-30, 1981, Dayton, Ohio.
451. *Farley, Gary L.: Energy Absorption of Composite Fuselage Section. Presented at the Fifth DOD/NASA Conference on Fibrous Composites in Structural Design, January 27-29, 1981, New Orleans, Louisiana.
452. *Farley, Gary L.; and *Baker, Donald J.: Application of Buckled Composite Skins on Helicopter Fuselages. Presented at the Fifth DOD/NASA Conference on Fibrous Composites in Structural Design, January 27-29, 1981, New Orleans, Louisiana.
453. Hergenrother, Paul: High Temperature Adhesives. Presented at the Plastics Institute of America Course on "Advances in Adhesion Sciences and Adhesives," October 20-22, 1981, Boston, Massachusetts.
454. Howell, W. Edward: Structural Application. Presented at the Workshop on Lightning Effects on Future Aircraft Electronic Systems, November 4-6, 1981, Hampton, Virginia.
455. Johnson, W. S.: Overview of NASA Programs Directed Toward Adhesive Joint Service Life Prediction. Presented at the DOD/NASA Adhesion Workshop, April 23-24, 1981, Dayton, Ohio.

*Army Structures Laboratory, USARTL (AVRADCOM)

456. Johnson, W. S.: Fracture Mechanics and Adhesively Bonded Structures. Presented at the ASTM Committee E24 Technical Session, October 19-23, 1981, St. Louis, Missouri.
457. Landis, H.; Brewer, W.; Unnam, J.; and Naidu, S. V. N.: Fiber-Matrix Interactions in SiC/Ti Composites. Presented at the 1981 Annual Meeting of the Virginia Academy of Science, May 12-15, 1981, Norfolk, Virginia.
458. Landis, H.; Naidu, S. V. N.; Unnam, J.; and Brewer, W. D.: Modification of Silicon Carbide Fiber for Use in SiC/Ti Composites. Presented at the AIME 110th Annual Meeting, February 22-26, 1981, Chicago, Illinois.
459. Long, E. R., Jr.; and Schuszler, A., II: Elevated Temperature Effects on the Dielectric Properties of Thin Films. Presented at the 1981 Spring Meeting of the American Physical Society, April 20-23, 1981, Baltimore, Maryland.
460. Newman, J. C., Jr: Stress-Intensity Factor Solution Techniques. Presented at the ASTM E24 Committee Meeting, March 17-19, 1981, New Orleans, Louisiana.
461. Newman, J. C., Jr.; and Raju, I. S.: Computational Fracture Mechanics. Presented at the Workshop on Computer Science Research, November 2-5, 1981, Hampton, Virginia.
462. *O'Brien, T. K.: Test Methods to Determine the Interlaminar Fracture Toughness of Laminated Fibrous Composites. Presented at the ASTM D30.04 Subcommittee Meeting, October 19-23, 1981, St. Louis, Missouri.
463. *O'Brien, T. Kevin; Ryder, James T.; and Crossman, Frank W.: Stiffness, Strength, and Fatigue Life Relationships for Composite Laminates. Presented at the Seventh Annual Mechanics of Composites Review, October 28-30, 1981, Dayton, Ohio.
464. Poe, C. C., Jr.: Fracture Theory and Damage Tolerance of Composite Laminates. Presented at the Seventh Annual Mechanics of Composites Review, October 28-30, 1981, Dayton, Ohio.
465. Price, Howard L.; and Cupschalk, Stephen G.: Pultrusion of Composite Materials as a Rheological Process. Presented at the 52nd Annual Meeting of the Society of Rheology, Symposium on Polymer Processing, February 22-26, 1981, Williamsburg, Virginia.
466. *Roderick, G. L.: Prediction of Cyclic Growth and Debonds in Aluminum Sheets Reinforced with Composites. Presented at International Workshop on Defense Applications of Advanced Repair Technology for Metal and Composite Structures, Naval Research Laboratory, Washington, D.C., July 24, 1981.
467. Ross, W. D.; Spillman, J. E.; Gridley, J.; and Bell, V. L.: Correlation of Chemical and Steric Features of Aromatic Diamine Compounds With In Vitro Mutagenicity. Presented at the Symposium on Structure-Activity Correlation as a Predictive Tool in Toxicology, February 9-12, 1981, Raleigh, North Carolina.

468. Royster, Dick M.: Weld Brazing of Super Plastic Formed Titanium. Presented at the AIAA/NASA Seminar on Advanced Materials Processing and Related Technologies, October 6-7, 1981, Hampton, Virginia.
469. Rummler, Donald R.: Shuttle Thermal Protection System Materials. Presented at the AIAA/NASA Seminar on Advanced Materials Processing and Related Technologies, October 6-7, 1981, Hampton, Virginia.
470. St. Clair, Anne K.; and Taylor, Larry T.: Physical and Mechanical Properties of Polyimide Films Containing Metal Ions. Presented at the American Chemical Society 33rd Southeastern Regional Meeting, November 4-6, 1981, Lexington, Kentucky.
471. St. Clair, Terry L.: Adhesive Research At NASA Langley. Presented at the DOD/NASA Workshop on Adhesive Joint Service Life Prediction, April 23-24, 1981, Dayton, Ohio.
472. St. Clair, Terry L.: Adhesive Technology. Presented at the North Carolina Department of Commerce Conference on Profit Through Innovation, September 10, 1981, Raleigh, North Carolina.
473. St. Clair, Terry L.: Advanced High Temperature Polymers. Presented at the AIAA/NASA Seminar on Advanced Materials Processing and Related Technologies, October 6-7, 1981, Hampton, Virginia.
474. St. Clair, Terry L.: High-Temperature Adhesives for Aerospace Applications. Presented at the State University of New York Course on Fundamentals of Adhesion: Theory, Practice and Applications, October 7-9, 1981, New Paltz, New York.
475. Shivakumar, K. N.; and Crews, John H., Jr.: Viscoelastic Analysis of Bolt Clampup Force Relaxation in a Graphite/Epoxy Joint. Presented at the AIAA/ASME/ASCE/AHS 22nd Structures, Structural Dynamics and Materials Conference, April 6-8, 1981, Atlanta, Georgia.
476. Townsend, L. W.: Projectile-Ion Fragmentation by Abrasion: An Optical Model Approach. Presented at the 1981 Spring Meeting of the American Physical Society, April 20-23, 1981, Baltimore, Maryland.
477. Young, P. R.: Characterization of Initial Cure Reactions in End Capped Imide Model Compounds. Presented at the Gordon Research Conference on "Chemical Characterization of Structural Polymers," June 8-12, 1981, Tilton, New Hampshire.

PUBLICATIONS FOR ACOUSTICS AND NOISE REDUCTION DIVISION

Formal Reports

478. DeLoach, Richard: Airport Noise Impact Reduction Through Operations. NASA TM-81970, May 1981, 21 p.
(Avail: NTIS Subject Category 71 RTOP 505-35-13)
479. Hardin, Jay C.; and Preisser, John S.: Stochastic Analysis of Spectral Broadening by a Free Turbulent Shear Layer. NASA TP-1816, May 1981, 24 p.
(Avail: NTIS Subject Category 71 RTOP 505-32-03)
480. Hubbard, Harvey H.; and Powell, Clemans A.: Acoustic Facilities for Human Factors Research at NASA Langley Research Center - Description and Operational Capabilities. NASA TM-81975, June 1981, 13 p.
(Avail: NTIS Subject Category 71 RTOP 505-35-13)
481. Martin, R. M.; and Farassat, F.: Users' Manual for a Computer Program To Calculate Discrete Frequency Noise of Conventional and Advanced Propellers. NASA TM-83135, August 1981, 89 p.
(Avail: NTIS Subject Category 71 RTOP 505-41-43)
482. Michel, Ulf; and Michalke, Alfons: Prediction of Flyover Jet Noise Spectra From Static Tests. NASA TM-83219, December 1981, 25 p.
(Avail: NTIS Subject Category 71 RTOP 505-32-03)
483. Mixson, John S.; Greene, George C.; and Dempsey, Thomas K.: Sources, Control, and Effects of Noise From Aircraft Propellers and Rotors. NASA TM-81971, April 1981, 22 p.
(Avail: NTIS Subject Category 71 RTOP 505-33-53)
484. Mueller, Arnold W.; and Preisser, John S.: Flight Test of a Pure-Tone Acoustic Source. NASA TP-1898, October 1981, 38 p.
(Avail: NTIS Subject Category 71 RTOP 505-32-03)
485. Powell, Clemans A.: Subjective Field Study of Response to Impulsive Helicopter Noise. NASA TP-1833, April 1981, 40 p.
(Avail: NTIS Subject Category 71 RTOP 505-35-13)
486. Raney, J. P.; Padula, S. L.; and Zorumski, W. E.: NASA Progress in Aircraft Noise Prediction. NASA TM-81915, March 1981, 38 p.
(Avail: NTIS Subject Category 71 RTOP 505-32-03)
487. Shearin, John G.: Airframe Noise of a Small Model Transport Aircraft and Scaling Effects. NASA TP-1858, May 1981, 24 p.
(Avail: NTIS Subject Category 71 RTOP 505-32-03)
488. Watson, Willie R.: Noise Suppression Characteristics of Peripherally Segmented Duct Liners. NASA TP-1904, September 1981, 41 p.
(Avail: NTIS Subject Category 71 RTOP 505-32-03)

489. Willis, Conrad M.; and Daniels, Edward F.: Experimental Study of Noise Reduction for an Unstiffened Cylindrical Model of an Airplane Fuselage. NASA TP-1964, December 1981, 34 p.
(Avail: NTIS Subject Category 71 RTOP 505-33-53)
490. Willshire, Kelli F.; and Powell, Clemans A.: Effects of Activity Interference on Annoyance Due to Aircraft Noise. NASA TP-1938, November 1981, 28 p.
(Avail: NTIS Subject Category 45 RTOP 505-35-13)
491. Yu, James C.: Mean-Flow and Turbulence Measurements in the Vicinity of the Trailing Edge of an NACA 63₁-012 Airfoil. NASA TP-1845, May 1981, 42 p.
(Avail: NTIS Subject Category 34 RTOP 505-32-03)

Quick-Release Technical Memorandums

492. Clevenson, Sherman A.: Effect of Tactile Vibration on Annoyance to Synthesized Propfan Noise. NASA TM-83258, December 1981, 15 p.
(Avail: NTIS Subject Category 53 RTOP 505-35-13)
493. Fields, James M.: A Catalog of Social Surveys of Residents' Reactions to Environmental Noise (1943-1980). NASA TM-83187, August 1981, 177 p.
(Avail: NTIS Subject Category 45 RTOP 505-35-13)
494. *Hammond, C. E.; *Hollenbaugh, D. D.; Clevenson, S. A.; and Leatherwood, J. D.: An Evaluation of Helicopter Noise and Vibration Ride Qualities Criteria. NASA TM-83251, December 1981, 13 p.
(Avail: NTIS Subject Category 53 RTOP 505-35-13)
495. Leatherwood, Jack D.; and Gowdey, Joe C.: Mission Load Dynamic Tests of Two Undensified Space Shuttle Thermal Protection System Tiles. NASA TM-83148, June 1981, 51 p.
(Avail: NTIS Subject Category 39 RTOP 506-89-01)
496. McCurdy, David A.; and Powell, Clemans A.: Annoyance Caused by Propeller Airplane Flyover Noise: Preliminary Results. NASA TM-83244, December 1981, 34 p.
(Avail: NTIS Subject Category 71 RTOP 505-35-13)
497. Willshire, William L., Jr.: Lateral Attenuation of High-Bypass Ratio Engine Aircraft Noise. NASA TM-81968, April 1981, 36 p.
(Avail: NTIS Subject Category 71 RTOP 505-32-03)
498. Willshire, William L., Jr.: SEL and EPNL Noise Duration Coefficients for the 747 and T-38 Aircraft. NASA TM-83214, September 1981, 11 p.
(Avail: NTIS Subject Category 71 RTOP 505-32-03)

Contractor Reports

499. Bennett, Ricarda L.; and Pearsons, Karl S.: Handbook of Aircraft Noise Metrics. (NAS1-14611 Bolt Beranek and Newman Inc.) NASA CR-3406, March 1981, 218 p.
(Avail: NTIS Subject Category 71 RTOP 505-35-13)
500. Clark, T. L.; Slotboom, D. R.; and Vaidya, P. G.: Investigation of the Effects of Inlet Shape on Fan Noise Radiation. (NAS1-15394 Boeing Commercial Airplane Company.) NASA CR-3416, April 1981, 47 p.
(Avail: NTIS Subject Category 71 RTOP 505-32-03)
501. Fidell, S.; Horonjeff, R.; Teffeteller, S.; and Pearsons, K.: Community Sensitivity to Changes in Aircraft Noise Exposure. (NAS1-14611 Bolt Beranek and Newman Inc.) NASA CR-3490, December 1981, 120 p.
(Avail: NTIS Subject Category 71 RTOP 505-35-13)
502. Geisler, D. L.: Experimental Modal Analysis of an Aero Commander Aircraft. (NAS1-14693 Wyle Laboratories; Subcontractor: Structural Dynamics Research Corporation.) NASA CR-165750, September 1981, 176 p.
(Avail: NTIS Subject Category 71 RTOP 505-33-53)
503. Hecht, A. M.; Teske, M. E.; and Bilanin, A. J.: Computing Aerodynamic Sound Using Advanced Statistical Turbulence Theories. (NAS1-15937 Continuum Dynamics, Inc.) NASA CR-165697, April 1981, 71 p.
(Avail: NTIS Subject Category 71 RTOP 505-32-03)
504. Howe, M. S.: On the Generation of Side-Edge Flap Noise. (NAS1-16142 Bolt Beranek and Newman Inc.) NASA CR-3437, June 1981, 43 p.
(Avail: NTIS Subject Category 71 RTOP 505-31-23)
505. Howe, M. S.: The Attenuation of Sound in a Randomly Lined Duct. (NAS1-16521 Bolt Beranek and Newman Inc.) NASA CR-165823, 1981.
(Avail: NTIS (Pending) Subject Category 71 RTOP 505-32-03)
506. Hubbard, H. H.; Shepherd, K. P.; and Grosveld, F. W.: Sound Measurements of the MOD-2 Wind Turbine Generator. (NAG1-166 and NAS1-14970 The College of William and Mary and the Bionetics Corporation.) NASA CR-165752, July 1981, 29 p.
(Avail: NTIS Subject Category 71 RTOP 776-31-41)
507. Hubbard, H. H.; Shepherd, K. P.; and Grosveld, F. W.: Broad Band Sound From Wind Turbine Generators. (NAG1-166 The College of William and Mary and NAS1-14970 The Bionetics Corporation.) NASA CR-165810, November 1981, 15 p.
(Avail: NTIS Subject Category 71 RTOP 776-31-41)
508. Palumbo, Daniel L.: An Operations Manual for the Spinning Mode Synthesizer in the Langley Aircraft Noise Reduction Laboratory. (NAS1-16000 Kentron International, Inc.) NASA CR-165698, March 1981, 48 p.
(Avail: NTIS Subject Category 71 RTOP 505-32-03)
509. Schlinker, Robert H.; and Amiet, Roy K.: Helicopter Rotor Trailing Edge Noise. (NAS1-15730 United Technologies Research Center.) NASA CR-3470, November 1981, 148 p.
(Avail: NTIS Subject Category 71 RTOP 505-42-13)

510. Shepherd, Kevin P.: Cumulative Annoyance Due to Multiple Aircraft Flyovers With Differing Peak Noise Levels. (NAS1-14970 The Bionetics Corporation.) NASA CR-3417, May 1981, 27 p.
(Avail: NTIS Subject Category 45 RTOP 505-35-13)
511. Succi, G. P.; Munro, D. H.; Zimmer, J. A.; Dunbeck, P. D.; Larabee, E. E.; Ingard, K. U.; and Kerrebrock, J. L.: Noise and Performance of Propellers for Light Aircraft. (NAS1-15154 Massachusetts Institute of Technology.) NASA CR-165732, June 1981, 25 p.
(Avail: NTIS Subject Category 71 RTOP 505-41-43)
512. Succi, George P.: Validation of Helicopter Noise Prediction Techniques. (NAS1-15740 Bolt Beranek and Newman Inc.) NASA CR-165715, April 1981.
(Avail: NTIS Subject Category 71 RTOP 505-41-43)
513. Sutherland, Louis C.; and Brown, Ron: Static Tests of Excess Ground Attenuation at Wallops Flight Center. (NAS1-15845 Wyle Research Laboratories.) NASA CR-3435, June 1981, 158 p.
(Avail: NTIS Subject Category 71 RTOP 505-32-03)
514. Tanna, H. K.; Tam, C. K. W.; and Brown, W. H.: Shock Associated Noise Reduction From Inverted-Velocity-Profile Coannular Jets. (NAS1-15971 Lockheed-Georgia Company.) NASA CR-3454, August, 1981, 159 p.
(Avail: NTIS Subject Category 71 RTOP 505-32-03)
515. Unruh, James F.; and Scheidt, Dennis C.: Engine Isolation for Structural-Borne Interior Noise Reduction in a General Aviation Aircraft. (NAS1-14861 Southwest Research Institute.) NASA CR-3427, May 1981, 161 p.
(Avail: NTIS Subject Category 71 RTOP 505-33-53)
516. Yates, John E.: A Study of the Viscous Dissipation and Surface Loading on a Vibrating Surface. (NAS1-16365 Aeronautical Research Associates of Princeton, Inc.) NASA CR-3499, December 1981, 50 p.
(Avail: NTIS Subject Category 71 RTOP 505-42-13)

Journal Articles and Periodical Literature

517. Barton, C. Kearney; and Mixson, John S.: Characteristics of Propeller Noise on an Aircraft Fuselage. Journal of Aircraft, Volume 18, Number 3, March 1981, p. 200-205.
(Avail: AIAA Subject Category 71 RTOP 505-09-23)
518. Barton, C. Kearney; and Mixson, John S.: Noise Transmission and Control for a Light, Twin-Engine Aircraft. Journal of Aircraft, Volume 18, Number 7, July 1981, p. 570-575.
(Avail: AIAA Subject Category 71 RTOP 505-33-53)
519. Bayliss, Alvin; and Maestrello, Lucio: Simulation of Instabilities and Sound Radiation in a Jet. AIAA Journal, Volume 19, Number 7, July 1981, p. 835-841.
(Avail: AIAA Subject Category 71 RTOP 505-32-03)
520. Block, P. J. W.: Predicted Airframe Noise Levels for Certification Flights. Journal of Aircraft, Volume 18, Number 9, September 1981, p. 834-841.
(Avail: AIAA Subject Category 71 RTOP 505-31-23)

521. Brooks, T. F.: Trailing Edge Noise Prediction Using Amiet's Method. Journal of Sound and Vibration, Volume 77, Number 1, September 1981, p. 437-439.
(Avail: Academic Press Inc. Subject Category 71 RTOP 505-42-13)
522. Brooks, Thomas F.; and Hodgson, Thomas H.: Trailing Edge Noise Prediction Using Measured Surface Pressures. Journal of Sound and Vibration, Volume 77, Number 4, August 22, 1981, p. 69-117.
(Avail: Academic Press, Inc. Subject Category 71 RTOP 505-31-23)
523. Chow, P. L.; and Maestrello, L.: Statistical Estimation of Correlation for Nonstationary Aircraft Noise. Journal of the Acoustical Society of America, Volume 70, Number 3, September 1981, p. 735-739.
(Avail: ASA Subject Category 71 RTOP 505-32-03)
524. Farassat, F.: Linear Acoustic Formulas for Calculation of Rotating Blade Noise. AIAA Journal, Volume 19, Number 9, September 1981, p. 1122-1130.
(Avail: AIAA Subject Category 71 RTOP 505-41-43)
525. Key, Kelli F.; and Payne, M. Carr, Jr.: Effects of Noise Frequency on Performance and Annoyance for Women and Men. Perceptual and Motor Skills, Volume 52, 1981, p. 435-441.
(Avail: Perceptual & Motor Skills Subject Category 45 RTOP 505-35-13)
526. Maestrello, Lucio; Bayliss, Alvin; and Turkel, Eli: On the Interaction Between a Sound Pulse With the Shear Layer of an Axisymmetric Jet. Journal of Sound and Vibration, Volume 74, Number 2, January 1981, p. 281-301.
(Avail: Academic Press, Inc. Subject Category 71 RTOP 505-32-03)
527. McGary, Michael C.; and Crocker, Malcolm J.: Surface Intensity Measurements on a Diesel Engine. Noise Control Engineering. Volume 16, Number 1, January/February 1981, p. 26-36.
(Avail: Ray W. Herrick Laboratory Subject Category 71 RTOP 505-35-53)
528. Rao, Kodali V.; and Preisser, John S.: Spectral Variance and Aeroacoustic Data. Journal of the Acoustical Society of America, Volume 69, Number 5, May 1981, p. 1350-1354.
(Avail: AIP Subject Category 65 RTOP 505-32-03)

Meeting/Conference Papers

529. Barton, C. Kearney: Development of a Transmission Loss Test Facility for Light Aircraft Structures. Presented at the 5th National Noise Conference (NOISE-CON '81), June 8-10, 1981, Raleigh, North Carolina.
(Avail: Noise Control Foundation, Proceedings Subject Category 71 RTOP 505-33-53)
530. Clevenson, Sherman A.: Effect of Tactile Vibration on Annoyance to Synthesized Profan Noise. Presented at the 102nd Meeting of the Acoustical Society of America, November 30-December 4, 1981, Miami Beach, Florida.
(Avail: NTIS, NASA TM-83258 Subject Category 53 RTOP 505-35-13)

531. DeLoach, Richard: Quantification of Airport Community Noise Impact in Terms of Noise Levels, Population Density, and Human Subjective Response. Presented at the 5th National Noise Conference (NOISE-CON '81), June 8-10, 1981, Raleigh, North Carolina.
(Avail: Noise Control Foundation, Proceedings Subject Category 71
RTOP 505-35-13)
532. Gatski, T. B.: Numerical Simulation of Axisymmetric Turbulent Jet Flow. Presented at the AIAA 7th Aeroacoustics Conference, October 5-7, 1981, Palo Alto, California. AIAA Paper No. 81-1961.
(Avail: AIAA Subject Category 71 RTOP 505-32-03)
533. *Hammond, C. E.; *Hollenbaugh, D. D.; Clevenson, S. A.; and Leatherwood, J. D.: An Evaluation of Helicopter Noise and Vibration Ride Qualities Criteria. Presented at the American Helicopter Society Specialists' Meeting on Helicopter Vibration "Technology for the Jet Smooth Ride," November 2-4, 1981, Hartford, Connecticut.
(Avail: NTIS, NASA TM-83251 Subject Category 53 RTOP 505-35-13)
534. Hardin, Jay C.: The Role of the Helical Jet Model in Aerodynamic Noise Generation. Presented at the AIAA 7th Aeronautics Conference, October 5-7, 1981, Palo Alto, California. AIAA Paper No. 81-1963.
(Avail: AIAA Subject Category 71 RTOP 505-32-03)
535. Himelblau, H.; Shepherd, C. C.; Rucker, C. E.; and McCutchen, D. K.: The Shuttle Orbiter DI-19 Multi-Environmental Test Program. Presented at the 52nd Shock and Vibration Symposium, October 27-29, 1981, New Orleans, Louisiana.
(Avail: Shock & Vibration Center Bulletin, Proceedings (Pending)
Subject Category 39 RTOP 506-53-33)
536. Jones, A. D.; and Brown, G. L.: Determination of Two-Stroke Engine Exhaust Noise by the Method of Characteristics. Presented at the Nelson Industries, Inc., 1981 Acoustical Paper Awards Program, July 15-16, 1981, Stoughton, Wisconsin.
(Avail: Nelson Industries, Inc. Subject Category 71 RTOP 505-32-03)
537. Maestrello, Lucio; and Bayliss, Alvin: Flow and Far Field Acoustic Amplification Properties of Heated and Unheated Jets. Presented at the AIAA 7th Aeroacoustics Conference, October 5-7, 1981, Palo Alto, California. AIAA Paper No. 81-2008.
(Avail: AIAA Subject Category 71 RTOP 505-32-03)
538. McGary, Michael C.: Interior Noise Source/Path Identification on Propeller-Driven Aircraft Using Acoustic Intensity Methods. Presented at the 5th National Noise Conference (NOISE-CON '81), June 8-10, 1981, Raleigh, North Carolina.
(Avail: Noise Control Foundation, Proceedings Subject Category 71
RTOP 505-33-53)

539. Mixson, J. S.; Roussos, L. A.; Barton, C. K.; Vaicaitis, R.; and Slazak, M.: Laboratory Study of Efficient Add-On Treatments for Interior Noise Control in Light Aircraft. Presented at the AIAA 7th Aeroacoustics Conference, October 5-7, 1981, Palo Alto, California. AIAA Paper No. 81-1973.
(Avail: AIAA Subject Category 71 RTOP 505-33-53)
540. Molusis, J. A.; *Hammond, C. E.; and *Cline, J. H.: A Unified Approach to the Optimal Design of Adaptive and Gain Scheduled Controllers to Achieve Minimum Helicopter Rotor Vibration. Presented at the 37th Annual Forum of the American Helicopter Society, New Orleans, Louisiana, May 1981.
(Avail: AHS Subject Category 71 RTOP 505-35-13)
541. Mueller, Arnold W.: Flight Test of a Pure Tone Acoustic Source. Presented at the 102nd Meeting of the Acoustical Society of America, November 30-December 4, 1981, Miami Beach, Florida.
(Avail: NTIS, NASA TP-1898 Subject Category 71 RTOP 505-32-03)
542. Pao, S. P.; and Salas, M. D.: A Numerical Study of Two-Dimensional Shock Vortex Interaction. Presented at the AIAA 14th Fluid and Plasma Dynamics Conference, June 23-25, 1981, Palo Alto, California. AIAA Paper No. 81-1205.
(Avail: AIAA Subject Category 71 RTOP 505-32-03)
543. Pao, S. Paul; and Seiner, John M.: A Theoretical and Experimental Investigation of Shock-Associated Noise in Supersonic Jets. Presented at the AIAA 7th Aeroacoustics Conference, October 5-7, 1981, Palo Alto, California. AIAA Paper No. 81-1973.
(Avail: AIAA Subject Category 71 RTOP 505-32-03)
544. Preisser, J. S.; Schoenster, J. A.; Golub, R. A.; and Horne, C.: Unsteady Fan Blade Pressure and Acoustic Radiation From a JT15D-1 Turbofan Engine at Simulated Forward Speed. Presented at the AIAA 19th Aerospace Sciences Meeting, January 12-15, 1981, St. Louis, Missouri. AIAA Paper No. 81-0096.
(Avail: AIAA Subject Category 71 RTOP 505-32-03)
545. Ribner, Herbert S.: Perspectives on Jet Noise. Presented at the AIAA 19th Aerospace Sciences Meeting, January 12-15, 1981, St. Louis, Missouri. AIAA Paper No. 81-0428.
(Avail: AIAA Subject Category 71 RTOP 505-32-03)
546. Roussos, L. A.; Hyer, M. W.; and Thornton, E. A.: A Finite Element Model With Nonviscous Damping. Presented at the AIAA/ASME/ASCE/AHS 22nd Structures, Structural Dynamics and Materials Conference, April 6-8, 1981, Atlanta, Georgia. AIAA Paper No. 81-0490.
(Avail: AIAA Subject Category 71 RTOP 505-33-53)
547. Roussos, Louis A.; and Mixson, John S.: Acceleration Response of Fuselage Sidewall Panels on a Twin-Engine, Light Aircraft. Presented at the 5th National Noise Conference (NOISE-CON '81), June 8-10, 1981, Raleigh, North Carolina.
(Avail: Noise Control Foundation, Proceedings Subject Category 71 RTOP 505-33-53)

548. Seiner, J. M.; and Yu, J. C.: Acoustic Near Field and Local Flow Properties Associated With Broadband Shock Noise. Presented at the AIAA 7th Aeroacoustics Conference, October 5-7, 1981, Palo Alto, California. AIAA Paper No. 81-1975.
(Avail: AIAA Subject Category 71 RTOP 505-32-03)
549. Silcox, Richard J.; and Lester, Harold C.: Sound Propagation Through a Variable Area Duct: Experiment and Theory. Presented at the AIAA 7th Aeroacoustics Conference, October 5-7, 1981, Palo Alto, California. AIAA Paper No. 81-1967.
(Avail: AIAA Subject Category 71 RTOP 505-32-03)
550. Stephens, David G.; Shepherd, Kevin P.; and Grosveld, Ferdinand: Wind Turbine Acoustic Standards. Presented at the Second DOE/NASA Wind Turbine Dynamics Workshop, February 24-26, 1981, Cleveland, Ohio.
(Avail: NASA Lewis Research Center Subject Category 71 RTOP 505-35-13)
551. Stephens, David G.; Shepherd, Kevin P.; and Grosveld, Ferdinand: Establishment of Noise Acceptance Criteria for Wind Turbines. Presented at the ASME/AIAA/ACS/AICHE/ANS/IEEE/SAE 16th Intersociety Energy Conversion Engineering Conference, August 9-14, 1981, Atlanta, Georgia. Paper No. 819830.
(Avail: ASME, Proceedings Subject Category 71 RTOP 505-35-13)
552. Willshire, William L., Jr.: Ground Effects on Aircraft Noise for a Wide-Body Commercial Airplane. Presented at the AIAA 7th Aeroacoustics Conference, October 5-7, 1981, Palo Alto, California. AIAA Paper No. 81-1988.
(Avail: AIAA Subject Category 71 RTOP 505-32-03)
553. Yu, James C.; and Fratello, David J.: Measurement of Acoustic Shielding by a Turbulent Jet. Presented at the AIAA 7th Aeroacoustics Conference, October 5-7, 1981, Palo Alto, California. AIAA Paper No. 81-2019.
(Avail: AIAA Subject Category 71 RTOP 505-32-03)

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

Oral Presentations to Conferences/Workshops

554. Dempsey, Thomas K.: Affects of Aircraft Noise on Community Residents. Presented at the Fifty-Fourth Annual Meeting of the Virginia Social Science Association, March 20-21, 1981, Virginia Beach, Virginia.

555. Himelblau, H.; Shepherd, C. C.; Rucker, C. E.; and McCutchen, D. K.: The Shuttle Orbiter DI-19 Multi-Environmental Tests Program. Presented at the 102nd Meeting of the Acoustical Society of America, November 30-December 4, 1981, Miami Beach, Florida.
556. Powell, Clemans A.; and McCurdy, David A.: Effects of Repetition Rate and Impulsiveness on Annoyance Due to Simulated Helicopter Rotor Noise. Presented at the 102nd Meeting of the Acoustical Society of America, November 30-December 4, 1981, Miami Beach, Florida.
557. Raney, John P.: Progress in Design Methods for Reducing Noise of General Aviation Aircraft. Presented at the EPA/FAA Second National Conference on General Aviation and Land Use Planning, December 1-3, 1981, New Orleans, Louisiana.
558. Seiner, John M.; Patterson, John L., Jr.; and Hardin, Jay C.: Theory of Breath Sounds: Validation Studies. Presented at the 6th International Lung Sounds Conference, October 1-2, 1981, Boston, Massachusetts.
559. Shepherd, K. P.; Stephens, D. G.; and Grosveld, F.: Development of Wind Turbine Noise Criteria. Presented at the Fifth Biennial Wind Energy Conference and Workshop, October 5-7, 1981, Washington, D.C.
560. Stephens, David G.; and Dempsey, Thomas K.: Resident Annoyance Response to Aircraft Noise Events. Presented at the 102nd Meeting of the Acoustical Society of America, November 30-December 4, 1981, Miami Beach, Florida.
561. Ver, Istvan L.; Mayes, William H.; and McGary, Michael C.: Use of Reciprocity in Predicting the Sound Radiation of Complex Structures. Presented at the 102nd Meeting of the Acoustical Society of America, November 30-December 4, 1981, Miami Beach, Florida.

PUBLICATIONS FOR STRUCTURES AND DYNAMICS DIVISION

Formal Reports

562. Carden, Huey D.: Evaluation of Emergency-Locator-Transmitter Performance in Real and Simulated Crash Tests. NASA TM-81960, April 1981, 29 p.
(Avail: NTIS Subject Category 39 RTOP 505-41-33)
563. McComb, Harvey G., Jr.; and Noor, Ahmed K. (compilers): Research in Nonlinear Structural and Solid Mechanics. Supplement to NASA CP-2147, June 1981, 44 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-53)
564. Tanner, John A.; Stubbs, Sandy M.; and McCarty, John L.: Static and Yawed-Rolling Mechanical Properties of Two Type VII Aircraft Tires. NASA TP-1863, May 1981, 78 p.
(Avail: NTIS Subject Category 39 RTOP 505-44-33)
565. Tanner, John A.; Stubbs, Sandy M.; and Smith, Eunice G.: Behavior of Aircraft Antiskid Braking Systems on Dry and Wet Runway Surfaces - Hydromechanically Controlled System. NASA TP-1877, August 1981, 175 p.
(Avail: NTIS Subject Category 05 RTOP 505-44-33)
566. Vogler, William A.; and Tanner, John A.: Cornering Characteristics of the Nose-Gear Tire of the Space Shuttle Orbiter. NASA TP-1917, October 1981, 27 p.
(Avail: NTIS Subject Category 39 RTOP 505-44-33)
567. Yager, Thomas J.; and White, Ellis J.: Recent Progress Towards Predicting Aircraft Ground Handling Performance. NASA TM-81952, March 1981, 29 p.
(Avail: NTIS Subject Category 08 RTOP 505-44-33)

Quick-Release Technical Memorandums

568. Anderson, Melvin S.; Stroud, W. Jefferson; Durling, Barbara J.; and Hennessy, Katherine W.: PASCO: Structural Panel Analysis and Sizing Code - User's Manual. NASA TM-80182, November 1981, 109 p. (Supersedes NASA TM-80182, Issued January 1980.)
(Avail: NTIS Subject Category 39 RTOP 505-33-33)
569. Bales, Kay S.: Structures and Dynamics Division Research and Technology Plans - FY-81. NASA TM-83137, June 1981, 45 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-53)
570. Bush, Harold G.; and Heard, Walter L., Jr.: General Description of Nestable Column Structural and Assembly Technology. NASA TM-83255, December 1981, 15 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-43)
571. Cunningham, Sally W.: SPAR Data Set Contents. NASA TM-83181, October 1981, 40 p.
(Avail: NTIS Subject Category 62 RTOP 510-54-13)

572. Nayfeh, Adnan H.; Anderson, Melvin S.; and Herstrom, Catherine L.: A User's Guide to the GEOMLLS Computer Program for Determining the Geometry of Large Segmented Surfaces. NASA TM-81944, March 1981, 17 p.
(Avail: NTIS Subject Category 17 RTOP 506-53-43)
573. Sawyer, James Wayne: Effect of Load Eccentricity and Substructure Deformations on Ultimate Strength of Shuttle Orbiter Thermal Protection System. NASA TM-83182, September 1981, 33 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-53)
574. Sawyer, James Wayne; and Waters, William Allen, Jr.: Room Temperature Shear Properties of the Strain Isolator Pad for the Shuttle Thermal Protection System. NASA TM-81900, January 1981, 38 p.
(Avail: NTIS Subject Category 39 RTOP 506-89-01)
575. Stroud, W. Jefferson; and Anderson, Melvin S.: PASCO: Structural Panel Analysis and Sizing Code - Capability and Analytical Foundations. NASA TM-80181, November 1981, 73 p. (Supersedes NASA TM-80181, Issued January 1980.)
(Avail: NTIS Subject Category 39 RTOP 505-33-33)
576. Stroud, W. Jefferson; Greene, William H; and Anderson, Melvin S.: Current Research on Shear Buckling and Thermal Loads With PASCO: Panel Analysis and Sizing Code. NASA TM-83206, September 1981, 12 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-53)
577. Stroud, W. Jefferson; Greene, William H.; and Anderson, Melvin S.: Buckling Loads for Stiffened Panels Subjected to Combined Longitudinal Compression and Shear Loadings: Results Obtained With PASCO, EAL, and STAGS Computer Programs. NASA TM-83194, October 1981, 64 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-53)
578. Williams, Jerry G.: Structural Tests on Space Shuttle Thermal Protection System Constructed With Nondensified and Densified LI 900 and LI 2200 Tile. NASA TM-81903, January 1981, 43 p.
(Avail: NTIS Subject Category 39 RTOP 506-89-01)
579. Williams, Jerry G.; and Rhodes, Marvin D.: The Effect of Resin on the Impact Damage Tolerance of Graphite-Epoxy Laminates. NASA TM-83213, October 1981, 45 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)

Contractor Reports

580. Almroth, B. O.; Brogan, F. A.; and Stanley, G. M.: Structural Analysis of General Shells, Volume II: User Instructions for STAGSC-1. (NAS1-10843 Lockheed Palo Alto Research Laboratory.) NASA CR-165671, January 1981, 281 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-53)
581. Almroth, B. O.; Stehlin, P.; and Brogan, F. A.: Global Function Approach in Structural Analysis: Basic Approach, Numerical Results. (NAS1-10843 Lockheed Missiles & Space Company, Inc.) NASA CR-165669, April 1981, 22 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-53)

582. Andersen, Carl M.: Deep Anisotropic Shell Program for Tire Analysis. (NAS1-15965 The College of William and Mary.) NASA CR-3483, November 1981, 31 p.
(Avail: NTIS Subject Category 64 RTOP 505-44-33)
583. Anthony, F. M.; Colt, J. Z.; and Helenbrook, R. G.: Development and Validation of Cryogenic Foam Insulation for LH₂ Subsonic Transports. (NAS1-10969 Bell Aerospace Textron.) NASA CR-3404, February 1981, 79 p.
(Avail: NTIS Subject Category 31 RTOP 505-31-70)
584. Anthony, Frank M.; and Helenbrook, Robert G.: Design and Fabrication of a Stringer Stiffened Discrete-Tube Actively Cooled Panel for a Hypersonic Aircraft. (NAS1-12806 Bell Aerospace Textron.) NASA CR-3403, February 1981, 87 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-73)
585. Berman, Alex; and Wei, Fu Shang: Automated Dynamic Analytical Model Improvement. (NAS1-15805 Kaman Aerospace Corporation.) NASA CR-3452, July 1981, 47 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-63)
586. Daniel, I. M.; Niirro, T.; and Koller, G. M.: Development of Orthotropic Birefringent Materials for Photoelastic Stress Analysis. (NAS1-15541 IIT Research Institute.) NASA CR-165709, May 1981, 78 p.
(Avail: NTIS Subject Category 39 RTOP 524-71-03)
587. Davis, G. W.; and Sakata, I. F.: Design Considerations for Composite Fuselage Structure of Commercial Transport Aircraft. (NAS1-15949 Lockheed-California Company.) NASA CR-159296, March 1981, 49 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-33)
588. Dodge, Richard N.; and Clark, Samuel K.: A Comparison of Some Static and Dynamic Mechanical Properties of 18 x 5.5 and 49 x 17 Type VII Aircraft Tires as Measured by Three Test Facilities. (NSG-1494 The University of Michigan.) NASA CR-165720, July 1981, 85 p.
(Avail: NTIS Subject Category 03 RTOP 505-44-33)
589. Edighoffer, Harold: Parametric Analytical Studies for the Nonlinear Dynamic Response of the Tile/Pad Space Shuttle Thermal Protection System. (NAS1-16121 General Electric Company.) NASA CR-165707, October 1981, 71 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-33)
590. Hedgepeth, John M.: Critical Requirements for the Design of Large Space Structures. (NAS1-15347 Astro Research Corporation.) NASA CR-3484, November 1981, 48 p.
(Avail: NTIS Subject Category 18 RTOP 506-53-43)
591. Hedgepeth, John M.; MacNeal, Richard H.; Knapp, Karl; and MacGillivray, Charles S.: Considerations in the Design of Large Space Structures. (NAS1-15347 Astro Research Corporation.) NASA CR-165744, August 1981, 233 p.
(Avail: NTIS Subject Category 18 RTOP 506-53-43)

592. Hertzberg, P. E.; Smith, B. W.; and Miller, A. G.: Effect of Matrix Resin on the Impact Fracture Characteristics of Graphite-Epoxy Laminates. (NAS1-15107 Boeing Commercial Airplane Company.) NASA CR-165784, 1981.
(Avail: NTIS (Pending) Subject Category 24 RTOP 505-33-33)
593. Johnson, Robert R.; Kural, Murat H.; and Mackey, George B.: Thermal Expansion Properties of Composite Materials. (NAS1-14887, Task 17 Lockheed Missiles and Space Company, Inc.) NASA CR-165632, July 1981, 63 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-43)
594. Lee, E. G. S.; Boghani, A. B.; Captain, K. M.; Rutishauser, H. J.; Farley, H. L.; Fish, R. B.; and Jeffcoat, R. L.: Experimental and Analytical Studies of Advanced Air Cushion Landing Systems. (NAS1-15051 Foster-Miller Associates, Inc.) NASA CR-3476, November 1981, 186 p.
(Avail: NTIS Subject Category 05 RTOP 505-44-33)
595. Palmer, R. J.: Investigation of the Effect of Resin Material on Impact Damage to Graphite/Epoxy Composites. (NAS1-12675 McDonnell Douglas Corporation.) NASA CR-165677, March 1981, 116 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)
596. Ribble, John W.: Modular Antenna Design Study. (NAS1-14887 Lockheed Missiles and Space Company, Inc.) NASA CR-3316, September 1981, 202 p.
(Avail: NTIS Subject Category 37 RTOP 506-53-43)
597. Skoumal, D. E.: Design, Fabrication and Test of Graphite/Polyimide Composite Joints and Attachments for Advanced Aerospace Vehicles - Quarterly Technical Progress Report No. 6. (NAS1-15644 Boeing Aerospace Company.) NASA CR-159113, December 1980 (Released 1981), 78 p.
(Avail: NTIS Subject Category 39 RTOP 524-71-03)
598. Staff of Boeing Aerospace Company: Design, Fabrication and Test of Graphite/Polyimide Composite Joints and Attachments for Advanced Aerospace Vehicles, Quarterly Technical Progress Report No. 7. (NAS1-15644 Boeing Aerospace Company.) NASA CR-159114, April 1981, 48 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-33)
599. Staff of Boeing Aerospace Company: Design, Fabrication and Test of Graphite/Polyimide Composite Joints and Attachments for Advanced Aerospace Vehicles, Quarterly Technical Progress Report No. 8. (NAS1-15644 Boeing Aerospace Company.) NASA CR-159115, July 1981, 62 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-33)
600. Vaughan, Desmond H.: Modular Reflector Concept Study. (NAS1-15753 General Dynamics Corporation.) NASA CR-3411, March 1981, 118 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-43)
601. Vernon, Robert M.: Large Platform Assembler Non-Structural System Requirements. (NAS1-15240 Lockheed Missiles and Space Company, Inc.) NASA CR-165743, April 1981, 80 p.
(Avail: NTIS Subject Category 37 RTOP 506-53-43)

602. Waters, William Allen, Jr.: Tension Tests on Densified and Undensified LI 900 Orbiter Thermal Protection System Tiles With Substructure Curvature. (NAS1-16000 Kentron International, Inc.) NASA CR-165777, August 1981, 28 p.
(Avail: STIF Subject Category 15 RTOP 506-53-33)
603. White, Charles W.: An Approximate Solution to Improve Computational Efficiency of Impedance-Type Payload Load Prediction. (NAS1-14370 Martin Marietta Corporation.) NASA CR-165719, July 1981, 205 p.
(Avail: NTIS Subject Category 18 RTOP 506-53-63)

Journal Articles and Periodical Literature

604. Agrawal, Pradeep K.; Anderson, Melvin S.; and Card, Michael F.: Preliminary Design of Large Reflectors with Flat Facets. IEEE Transactions on Antennas and Propagation, Volume 29, Number 4, July 1981, p. 688-694.
(Avail: IEEE Subject Category 32 RTOP 506-53-43)
605. Anderson, Melvin S.: Buckling of Periodic Structures. AIAA Journal, Volume 19, Number 6, June 1981, p. 782-788.
(Avail: AIAA Subject Category 39 RTOP 506-53-43)
606. Cooper, Paul A.; and Holloway, Paul F.: The Shuttle Tile Story. Astronautics and Aeronautics, Volume 19, Number 1, January 1981, p. 24-36.
(Avail: AIAA Subject Category 16 RTOP 506-63-13)
607. Desmarais, Robert N.; and Reed, Wilmer H., III: Wing/Store Flutter With Nonlinear Pylon Stiffness. Journal of Aircraft, Volume 18, Number 11, November 1981, p. 984-987.
(Avail: AIAA Subject Category 08 RTOP 505-33-53)
608. Edighoffer, Harold H.; and Sewall, John L.: SPAR Analysis of LDEF Vibration Characteristics. Journal of Computers and Structures, Volume 13, Number 4, April 1981, p. 489-496.
(Avail: Pergamon Press Subject Category 39 RTOP 506-53-63)
609. Fulton, Robert E.: Using CAD/CAM to Improve Productivity: The IPAD Approach. Mechanical Engineering, November 1981, p. 64-69.
(Avail: Mechanical Engineering Subject Category 62 RTOP 510-54-13)
610. Heard, W. L., Jr.; Bush, Harold G.; Walz, J. E.; and Rehder, J. J.: Structural Sizing Considerations for Large Space Platforms. Journal of Spacecraft and Rockets, Volume 18, Number 6, November-December 1981, p. 556-564.
(Avail: AIAA Subject Category 39 RTOP 506-53-43)
611. Pappa, Richard S.; and Ibrahim, Samir R.: A Parametric Study of the ITD Modal Identification Algorithm. 51st Shock and Vibration Bulletin, Volume 52, Part 3, May 1981, p. 43-72.
(Avail: S & V Bulletin Subject Category 64 RTOP 506-53-63)
612. Sandford, M. C.; Ricketts, R. H.; Cazier, F. W., Jr.; and Cunningham, H. J.: Transonic Unsteady Airloads on an Energy Efficient Transport Wing With Oscillating Control Surfaces. Journal of Aircraft, Volume 18, Number 7, July 1981, p. 557-561.
(Avail: AIAA Subject Category 02 RTOP 534-02-13)

613. Sawyer, James Wayne; and Cooper, Paul A.: Analytical and Experimental Results for Bonded Single Lap Joints with Preformed Adherends. AIAA Journal, Volume 19, Number 11, November 1981, p. 1443-1451.
(Avail: AIAA Subject Category 39 RTOP 524-71-13)
614. Toni, Royce A.; and Eckstrom, Clinton V.: Feasibility of Recovering a One-Million-Pound Booster. Journal of Spacecraft and Rockets, Volume 18, Number 3, May/June 1981, p. 222-227.
(Avail: AIAA Subject Category 02 RTOP 505-33-53)
615. Williams, Jerry G.; Anderson, Melvin S.; Rhodes, Marvin D.; Starnes, James H., Jr.; and Stroud, W. Jefferson: Recent Developments in the Design, Testing and Impact-Damage Tolerance of Stiffened Composite Panels. Fibrous Composites in Structural Design (1980), edited by Edward Leneo, Donard W. Oplinger, and John J. Burke, 1980 (released in 1981), p. 259-291.
(Avail: Plenum Publishing Corporation Subject Category 24 RTOP 505-02-13)

Meeting/Conference Papers

616. Alfaro-Bou, Emilio; Fasanella, Edwin L.; and Williams, M. Susan: Determination of Crash Test Pulses and Their Application to Aircraft Seat Analysis. Presented at the 1981 SAE Business Aircraft Meeting and Exposition, April 7-10, 1981, Wichita, Kansas. SAE Paper No. 810611.
(Avail: SAE Subject Category 05 RTOP 505-41-33)
617. Anderson, Melvin S.: Vibration of Prestressed Periodic Lattice Structures. Presented at the AIAA Dynamics Specialists Conference, April 9-10, 1981, Atlanta, Georgia. AIAA Paper No. 81-0620.
(Avail: AIAA Subject Category 39 RTOP 506-53-43)
618. Belvin, W. Keith: Vibration and Buckling Studies of Pretensioned Structures. Presented at the Third Annual Large Space Systems Technology Review, November 16-19, 1981, Hampton, Virginia.
(Avail: NTIS, NASA CP-2215 Subject Category 39 RTOP 506-53-43)
619. Blackburn, C. L.; Dovi, A. R.; Kurtze, W. L.; and Storaasli, O. O.: IPAD Applications to the Design, Analysis, and/or Machining of Aerospace Structures. Presented at the AIAA/ASME/ASCE/AHS 22nd Structures, Structural Dynamics and Materials Conference, April 6-8, 1981, Atlanta, Georgia. AIAA Paper No. 81-0512.
(Avail: AIAA Subject Category 61 RTOP 505-33-63)
620. Carden, Huey D.; and Hayduk, Robert J.: Aircraft Subfloor Response to Crash Loadings. Presented at the 1981 SAE Business Aircraft Meeting and Exposition, April 7-10, 1981, Wichita, Kansas. SAE Paper No. 810614.
(Avail: SAE Subject Category 39 RTOP 505-41-33)
621. Cooper, Paul A.: Structural Characteristics of the Shuttle Orbiter Ceramic Thermal Protection System. Presented at the 52nd Shock and Vibration Symposium, October 27-29, 1981, New Orleans, Louisiana.
(Avail: Shock & Vibration Center Bulletin, Proceedings (Pending) Subject Category 39 RTOP 506-63-13)

622. Heard, Walter L., Jr.; Bush, Harold G.; Wallsom, Richard E.; and Jensen, J. Kermit: Mobile Work Station for Assembly of Large Space Structures (Zero-Gravity Simulation Tests). Presented at the Third Annual Large Space Systems Technology Review, November 16-19, 1981, Hampton, Virginia.
(Avail: NTIS, NASA CP-2215 Subject Category 39 RTOP 506-53-43)
623. Housner, J. M.; Giles, G. L.; and Vallas, M.: Dynamic and Static Modeling of the Shuttle Orbiter's Thermal Protection System. Presented at the 52nd Shock and Vibration Symposium, October 27-29, 1981, and the 102nd Meeting of the Acoustical Society of America, November 30-December 4, 1981, Miami Beach, Florida.
(Avail: Shock & Vibration Center Bulletin, Proceedings (Pending)
Subject Category 39 RTOP 506-63-13)
624. Housner, Jerrold M.; Edighoffer, Harold; and Park, K. C.: Nonlinear Dynamic Phenomena in the Space Shuttle Thermal Protection System. Presented at the AIAA/ASME/ASCE/AHS 22nd Structures, Structural Dynamics and Materials Conference, April 6-8, 1981, Atlanta, Georgia. AIAA Paper No. 81-0565.
(Avail: AIAA Subject Category 39 RTOP 506-89-01)
625. Ibrahim, Samir R.; and Pappa, Richard S.: Large Modal Survey Testing Using the Ibrahim Time Domain (ITD) Identification Technique. Presented at the AIAA/ASME/ASCE/AHS 22nd Structures, Structural Dynamics and Materials Conference, April 6-8, 1981, Atlanta, Georgia. AIAA Paper No. 81-0528.
(Avail: AIAA Subject Category 18 RTOP 506-53-63)
626. Kamat, Manohar P.; and Hayduk, Robert J.: Recent Developments in Quasi-Newton Methods for Structural Analysis and Synthesis. Presented at the AIAA/ASME/ASCE/AHS 22nd Structures, Structural Dynamics and Materials Conference, April 6-8, 1981, Atlanta, Georgia. AIAA Paper No. 81-0576.
(Avail: AIAA Subject Category 39 RTOP 505-33-53)
627. Rhodes, Marvin D.; and Williams, Jerry G.: Concepts for Improving the Damage Tolerance of Composite Compression Panels. Presented at the Fifth DOD/NASA Conference on Fibrous Composites in Structural Design, January 27-29, 1981, New Orleans, Louisiana.
(Avail: Naval Air Dev. Ctr. Subject Category 24 RTOP 505-33-63)
628. Schuetz, P. H.; Pinson, L. D.; and Thornton, H. T., Jr.: Unsteady Environments and Responses of the Shuttle Combined Loads Orbiter Test. Presented at the 52nd Shock and Vibration Symposium, October 27-29, 1981, New Orleans, Louisiana.
(Avail: Shock & Vibration Center Bulletin, Proceedings (Pending)
Subject Category 39 RTOP 506-53-63)
629. Starnes, James H., Jr.; and Rouse, Marshall: Postbuckling and Failure Characteristics of Selected Flat Rectangular Graphite-Epoxy Plates Loaded in Compression. Presented at the AIAA/ASME/ASCE/AHS 22nd Structures, Structural Dynamics and Materials Conference, April 6-8, 1981, Atlanta, Georgia. AIAA Paper No. 81-0543.
(Avail: AIAA Subject Category 24 RTOP 505-33-63)

630. Storaasli, Olaf O.; Vidal, James B.; and Jones, Gary K.: An Evaluation of Superminicomputers for Thermal Analysis. Presented at the Symposium on "Computational Aspects of Heat Transfer in Structures," November 3-5, 1981, Hampton, Virginia.
(Avail: NTIS, NASA CP-2216 (Pending) Subject Category 34
RTOP 506-53-53)
631. Stroud, W. Jefferson; Greene, William H.; and Anderson, Melvin S.: Current Research on Shear Buckling and Thermal Loads With PASCO: Panel Analysis and Sizing Code. Presented at the International Symposium on Optimum Structural Design, The 11th Naval Structural Mechanics Symposium, October 19-22, 1981, Tucson, Arizona.
(Avail: University of Arizona, Proceedings Subject Category 39
RTOP 505-33-33)
632. Thomson, Robert G; and Ciaifa, Caesar: Designing for Structural Crashworthiness. Presented at the AIAA International Air Transportation Conference, May 26-28, 1981, Atlantic City, New Jersey. AIAA Paper No. 81-0803.
(Avail: AIAA Subject Category 39 RTOP 505-33-53)
633. Williams, Jerry G.; and Rhodes, Marvin D.: The Effect of Resin on the Impact Damage Tolerance of Graphite Epoxy Laminates. Presented at the ASTM 6th Conference on Composite Materials: Testing and Design, May 12-13, 1981, Phoenix, Arizona.
(Avail: ASTM STP, Proceedings (Pending) Subject Category 39
RTOP 505-33-33)
634. Yager, Thomas J.; and Buhlmann, F.: Friction Evaluation of Different Tires Used on Several Pavement Test Vehicles. Presented at the ASTM Symposium on Frictional Interaction of Tire and Pavement, November 12-13, 1981, Akron, Ohio.
(Avail: ASTM Subject Category 09 RTOP 505-44-33)

Computer Programs

635. Haftka, R. T.; Prasad, B.; and Tsach, U. (Illinois Institute of Technology): PARS: Program for Analysis and Resizing of Structures. Program No. LAR-12704. NASA Accession No. M80-10028. Released 1981.
(Avail: COSMIC Subject Category 39)
636. Perry, Boyd, III; and Durling, Barbara J. (Langley Research Center); Kroll, Richard I.; Miller, Ronald D.; Hirayama, Mack Y.; and Clemmons, Richard E. (The Boeing Company): DYLOFLEX; Dynamic Loads Analysis of Flexible Aircraft with Active Controls. Program No. LAR-12747. NASA Accession No. M80-10077. Released 1981.
(Avail: COSMIC Subject Category 08)
637. Perry, Boyd, III; and Durling, Barbara J. (Langley Research Center); Kroll, Richard I.; Miller, Ronald D.; Hirayama, Mack Y.; and Clemmons, Richard E. (The Boeing Company): INTERP: Modal Interpolation Program of the DYLOFLEX System. Program No. LAR-12754. NASA Accession No. M80-10070. Released 1981.
(Avail: COSMIC Subject Category 05)

638. Perry, Boyd, III; and Durling, Barbara J. (Langley Research Center); Kroll, Richard I.; Miller, Ronald D.; Hirayama, Mack Y.; and Clemmons, Richard E. (The Boeing Company): DUBFLX: Three-Dimensional Subsonic, Unsteady Aerodynamic Characteristics Using the Doublet Lattice Method Program of the DYLOFLEX System. Program No. LAR-12755. NASA Accession No. M80-10069. Released 1981.
(Avail: COSMIC Subject Category 02)
639. Perry, Boyd, III; and Durling, Barbara J. (Langley Research Center); Kroll, Richard I.; Miller, Ronald D.; Hirayama, Mack Y.; and Clemmons, Richard E. (The Boeing Company): EOM: Equations of Motion Matrices Generator Program of the DYLOFLEX System. Program No. LAR-12756. NASA Accession No. M80-10071. Released 1981.
(Avail: COSMIC Subject Category 05)
640. Perry, Boyd, III; and Durling, Barbara J. (Langley Research Center); Kroll, Richard I.; Miller, Ronald D.; Hirayama, Mack Y.; and Clemmons, Richard E. (The Boeing Company): LOADS: Load Coefficient Matrices Program of the DYLOFLEX System. Program No. LAR-12757. NASA Accession No. M80-10072. Released 1981.
(Avail: COSMIC Subject Category 05)
641. Perry, Boyd, III; and Durling, Barbara J. (Langley Research Center); Kroll, Richard I.; Miller, Ronald D.; Hirayama, Mack Y.; and Clemmons, Richard E. (The Boeing Company): EQMOD: Equation Modifying Program of the DYLOFLEX System. Program No. LAR-12758. NASA Accession No. M80-10074. Released 1981.
(Avail: COSMIC Subject Category 08)
642. Perry, Boyd, III; and Durling, Barbara J. (Langley Research Center); Kroll, Richard I.; Miller, Ronald D.; Hirayama, Mack Y.; and Clemmons, Richard E. (The Boeing Company): TEV156: Random Harmonic Analysis Program of the DYLOFLEX System. Program No. LAR-12759. NASA Accession No. M80-10075. Released 1981.
(Avail: COSMIC Subject Category 08)
643. Perry, Boyd, III; and Durling, Barbara J. (Langley Research Center); Kroll, Richard I.; Miller, Ronald D.; Hirayama, Mack Y.; and Clemmons, Richard E. (The Boeing Company): QR: Linear Systems Analysis Program of the DYLOFLEX System. Program No. LAR-12760. NASA Accession No. M80-10076. Released 1981.
(Avail: COSMIC Subject Category 08)
644. Perry, Boyd, III; and Durling, Barbara J. (Langley Research Center); Kroll, Richard I.; Miller, Ronald D.; Hirayama, Mack Y.; and Clemmons, Richard E. (The Boeing Company): TEV126: Time History Solution Program of the DYLOFLEX System. Program No. LAR-12761. NASA Accession No. M80-10073. Released 1981.
(Avail: COSMIC Subject Category 05)

Tech Briefs

645. Beuyukian, Charles S. (Rockwell International Corp.): Fluxless Brazing of Large Structural Panels. NASA Tech Brief LAR-12519. Released 1981.
(Avail: NASA Langley Technology Utilization Office
Category: Fabrication Technology)

646. Bush, Harold G. (Langley Research Center); and Weller, Tanchum (National Academy of Sciences): Biaxial Method for In-Plane Shear Testing. NASA Tech Brief LAR-12680. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)
647. Camarda, Charles J.; Couch, Lana M.; and Kelly, H. Neale: Heat Pipes Cool Probe and Sandwich Panel. NASA Tech Brief LAR-12637. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)
648. Haftka, R. T.; Prasad, B.; and Tsach, U. (Illinois Institute of Technology): Program for Analysis and Resizing of Structures. NASA Tech Brief LAR-12704. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)
649. Jackson, L. Robert: Metallic Panels Would Insulate at 2,700°F. NASA Tech Brief LAR-12620. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Fabrication Technology)
650. Perry, Boyd, III (Langley Research Center); Durling, Barbara J. (Langley Research Center); Kroll, Richard I. (Boeing Company); Miller, Ronald D. (Boeing Company); Hirayama, Mack Y. (Boeing Company); and Clemmons, Richard E. (Boeing Company): Dynamic-Loads Analysis of Flexible Aircraft With Active Controls. NASA Tech Brief LAR-12747. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)
651. Rhodes, Marvin D.; and Williams, Jerry G.: Lacquer Reveals Impact Damage in Composites. NASA Tech Brief LAR-12700. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)
652. Totah, Raymond S. (Rockwell International Corp.): Ball-and-Socket Joint Can Be Disassembled. NASA Tech Brief LAR-12770. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Machinery)

Patents

653. Bush, Harold G.: Lightweight Structural Columns. U.S. Patent 4,259,821. Issued 1981.
(Avail: U.S. Patent & Trademark Office Subject Category 39)
654. Harper, Philip M., Sr.: Tire/Wheel Concept. U.S. Patent 4,267,992. Issued 1981.
(Avail: U.S. Patent & Trademark Office Subject Category 37)
655. Hedgepeth, John M.; Coyner, John V.; and Crawford, Robert F.: Foldable Beam. (NAS1-13178 Astro Research Corp.) U.S. Patent 4,259,825. Issued 1981.
(Avail: U.S. Patent & Trademark Office Subject Category 39)

Oral Presentations to Conferences/Workshops

656. Cooper, Paul A.: Structural Characteristics of the Shuttle Orbiter Ceramic Thermal Protection System. Presented at the 102nd Meeting of the Acoustical Society of America, November 30-December 4, 1981, Miami Beach, Florida.

657. Fulton, Robert E.: Overview of NASA IPAD Project and IPAD/ICAM Cooperative Activity. Presented at the ASME CAD/CAM Conference, September 27-30, 1981, Minneapolis, Minnesota.
658. Fulton, Robert E.: IPAD - An Approach to Improving Industry Productivity. Presented at the AIAA Computers in Aerospace III Conference, October 26-28, 1981, San Diego, California.
659. *Loendorf, David: IPAD's IPIP: An Approach to Engineering Data Management. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
660. Rhodes, Marvin D.: Impact Damage Containment in Strength Critical Graphite/Epoxy Compression Structures. Presented at the Seventh Annual Mechanics of Composites Review, October 28-30, 1981, Dayton, Ohio.
661. Storaasli, Olaf: An Overview of CAD Systems and IPAD CAD Capability. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
662. Storaasli, Olaf: Overview of Session II: Computer-Aided Modeling for Analysis-Geometry and Graphics. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
663. Storaasli, Olaf O.: Effectiveness of Using Minicomputers to Solve Engineering Problems. Presented at the 1981 Southeastern Section Meeting of the American Society for Engineering, April 6-7, 1981, Chattanooga, Tennessee.
664. Thurston, Gaylen A.: Implicit Numerical Integration for Autonomous Nonlinear Systems. Presented at the ASME/ASCE Mechanics Conference, June 22-24, 1981, Boulder, Colorado.
665. Yager, Thomas J.: An Overview of NASA Runway Friction Research. Presented at the FAA Transport Airplane Takeoff Performance Requirements Conference, November 16-20, 1981, Seattle, Washington.

PUBLICATIONS FOR LOADS AND AEROELASTICITY DIVISION

Formal Reports

666. Avery, Don E.: Performance of a Haynes 188[®] Metallic Standoff Thermal Protection System at Mach 7. NASA TP-1802, April 1981, 41 p.
(Avail: NTIS Subject Category 18 RTOP 533-01-13)
667. Avery, Don E.; Shideler, John L.; and Stuckey, Robert N.: Thermal and Aerothermal Performance of a Titanium Multiwall Thermal Protection System. NASA TP-1961, December 1981, 57 p.
(Avail: NTIS Subject Category 18 RTOP 505-53-33)
668. Mukhopadhyay, Vivek; Newsom, Jerry R.; and Abel, Irving: A Method for Obtaining Reduced-Order Control Laws for High-Order Systems Using Optimization Techniques. NASA TP-1876, August 1981, 65 p.
(Avail: NTIS Subject Category 63 RTOP 505-33-63)
669. Rogers, James L., Jr.; Sobieszczanski-Sobieski, Jaroslaw; and Bhat, Rama B.: An Implementation of the Programming Structural Synthesis System (PROSSS). NASA TM-83180, December 1981, 134 p.
(Avail: IAC Subject Category 61 RTOP 505-33-63)
670. Sandford, Maynard C.; Ricketts, Rodney H.; and Watson, Judith J.: Subsonic and Transonic Pressure Measurements on a High-Aspect-Ratio Supercritical-Wing Model With Oscillating Control Surfaces. NASA TM-83201, November 1981, 224 p.
(Avail: IAC Subject Category 02 RTOP 534-02-13)
671. Weinstein, Irving; Avery, Don E.; and Hunt, L. Roane: Aerodynamic Heating on the Corrugated Surface of a 10.2° Half-Angle Blunted Cone at Mach 6.7. NASA TP-1928, December 1981, 43 p.
(Avail: NTIS Subject Category 34 RTOP 506-53-63)
672. *Yeager, William T., Jr.; and *Mantay, Wayne R.: Wind-Tunnel Investigation of the Effects of Blade Tip Geometry on the Interaction of Torsional Loads and Performance for an Articulated Helicopter Rotor. NASA TP-1926, AVRADCOM TR 81-B-5, December 1981, 62 p.
(Avail: NTIS Subject Category 02 RTOP 505-42-13)

Quick-Release Technical Memorandums

673. Abel, I.; and Newsom, J. R.: Wind-Tunnel Evaluation of NASA Developed Control Laws for Flutter Suppression on a DC-10 Derivative Wing. NASA TM-83143, June 1981, 13 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-63)
674. Abel, I.; and Newsom, J. R.: Overview of Langley Activities in Active Controls Research. NASA TM-83149, June 1981, 20 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-63)

*Army Structures Laboratory, USARTL (AVRADCOM)

675. Adelman, Howard M.; Haftka, Raphael T.; and Robinson, James C.: Some Aspects of Algorithm Performance and Modeling in Transient Thermal Analysis of Structures. NASA TM-83190, August 1981, 9 p.
(Avail: NTIS Subject Category 34 RTOP 506-53-53)
676. Bennett, Robert M.; and Abel, Irving: Application of a Flight Test and Data Analysis Technique to Flutter of a Drone Aircraft. NASA TM-83136, May 1981, 10 p.
(Avail: NTIS Subject Category 05 RTOP 505-33-53)
677. Edwards, John W.: Flight Test Results of an Active Flutter Suspension System Installed on a Remotely Piloted Research Vehicle. NASA TM-83132, May 1981, 12 p.
(Avail: NTIS Subject Category 05 RTOP 505-33-53)
678. Giles, Gary L.; and Vallas, Maria: Computer Program for Nonlinear Static Stress Analysis of Shuttle Thermal Protection System - User's Manual. NASA TM-81856, May 1981, 58 p.
(Avail: NTIS Subject Category 39 RTOP 506-89-01)
679. Giles, Gary L.; and Vallas, Maria: Use of an Engineering Data Management System in the Analysis of Space Shuttle Orbiter Tiles. NASA TM-83215, October 1981, 12 p.
(Avail: NTIS Subject Category 61 RTOP 505-33-63)
680. Newsom, J. R.; and Mukhopadhyay, V.: Application of Constrained Optimization of Active Control of Aeroelastic Response. NASA TM-83150, June 1981, 14 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-63)
681. Newsom, Jerry R.; and Abel, Irving: Some Experience With Active Control of Aeroelastic Response. NASA TM-83179, July 1981, 18 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-63)
682. Newsom, Jerry R.; and Pototzky, Anthony S.: Comparison of Analysis and Flight Test Data for a Drone Aircraft With Active Flutter Suppression. NASA TM-83145, June 1981, 11 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-53)
683. Perry, Boyd, III: Qualitative Comparison of Calculated Turbulence Responses With Wind-Tunnel Measurements for a DC-10 Derivative Wing With an Active Control System. NASA TM-83144, June 1981, 12 p.
(Avail: NTIS Subject Category 39 RTOP 506-33-63)
684. Puster, Richard L.; Karns, John R.; Vasquez, Peter; and Kelliher, Warren C.: Ceramic and Coating Applications in the Hostile Environment of a High Temperature Hypersonic Wind Tunnel. NASA TM-81931, January 1981, 32 p.
(Avail: NTIS Subject Category 27 RTOP 506-53-63)
685. Reed, Wilmer H., III: Aeroelasticity Matters: Some Reflections on Two Decades of Testing in the NASA Langley Transonic Dynamics Tunnel. NASA TM-83210, September 1981, 17 p.
(Avail: NTIS Subject Category 02 RTOP 505-33-53)

686. Rogers, James L., Jr.: An Implementation of the Distribution Programing Structural Synthesis System (PROSSS). NASA TM-83253, December 1981, 89 p.
(Avail: IAC Subject Category 61 RTOP 505-33-63)
687. Ruhlin, Charles L.; and Murphy, Arthur C.: Transonic Flutter and Gust-Response Tests and Analyses of a Wind-Tunnel Model of a Torsion-Free-Wing Fighter Airplane. NASA TM-81961, April 1981, 15 p.
(Avail: NTIS Subject Category 05 RTOP 505-33-53)
688. Ruhlin, Charles L.; and Pratt-Barlow, Charles R.: Transonic Flutter Study of a Wind-Tunnel Model of an Aerowing Supersonic Transport. NASA TM-81962, April 1981, 14 p.
(Avail: NTIS Subject Category 05 RTOP 533-01-13)
689. Shideler, John L.; Kelly, H. Neale; Avery, Don E.; Blosser, Max L.; and Adelman, Howard M.: Multiwall TPS--An Emerging Concept. NASA TM-83133, May 1981, 8 p.
(Avail: NTIS Subject Category 18 RTOP 506-53-33)
690. Sobieszczanski-Sobieski, Jaroslaw; Barthelemy, Jean-Francois; and Riley, Kathleen M.: Sensitivity of Optimum Solutions to Problem Parameters. NASA TM-83134, May 1981, 22 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-63)
691. Sobieszczanski-Sobieski, Jaroslaw; and Rogers, James L., Jr.: A Programing System for Research and Applications in Structural Optimization. NASA TM-83191, August 1981, 14 p.
(Avail: NTIS Subject Category 05 RTOP 505-33-63)
692. Thornton, Earl A.; Dechaumphai, Pramote; Wieting, Allan R.; and Tamma, Kumar K.: Integrated Transient Thermal - Structural Finite Element Analysis. NASA TM-83125, May 1981, 17 p.
(Avail: NTIS Subject Category 34 RTOP 506-53-63)
693. Yates, E. Carson, Jr.; Wynne, Eleanor C.; Farmer, Moses G.; and Desmarais, Robert N.: Prediction of Transonic Flutter for a Supercritical Wing by Modified Strip Analysis and Comparison With Experiment. NASA TM-83126, May 1981, 29 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-53)
694. *Young, Warren H., Jr.: Fluid Mechanics Mechanisms in the Stall Process of Airfoils for Helicopters. NASA TM-81956, March 1981, 10 p.
(Avail: NTIS Subject Category 02 RTOP 505-42-13)

Contractor Reports

695. Blair, W.: Fabrication of Titanium Multiwall Thermal Protection System (TPS) Curved Panel. (NAS1-15646 Rohr Industries, Inc.) NASA CR-165754 August 1981, 30 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-33)

696. Gabel, Richard; Ricks, Robert; and Magiso, Hans: Planning, Creating, and Documenting a NASTRAN Finite Element Vibrations Model of a Modern Helicopter, Planning Report. (NAS1-16460 Boeing Vertol Company.) NASA CR-165722, April 1981, 297 p.
(Avail: STIF Subject Category 39 RTOP 505-42-13)
697. Hepler, Andrew K.; Arnquist, John; Koetje, Edward L.; Esposito, John J.; Lindsay, Victor E. J.; and Swegle, Allan R.: Design Data for Braze 41 Honeycomb Sandwich. (NAS1-14213 Boeing Aerospace Company.) NASA CR-3382, January 1981, 142 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-73)
698. Hepler, Andrew K.; and Swegle, Allan R.: Design and Fabrication of Braze Rene 41 Honeycomb Sandwich Structural Panels for Advanced Space Transportation Systems. (NAS1-14213 Boeing Aerospace Company.) NASA CR-165801, December 1981, 48 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-63)
699. Karpel, Mordechai: Design for Active and Passive Flutter Suppression and Gust Alleviation. (NGL 05-020-243 Stanford University.) NASA CR-3482, November 1981, 115 p.
(Avail: NTIS Subject Category 08 RTOP 505-33-53)
700. Lakin, W. D.: Two-Dimensional Integrating Matrices on Rectangular Grids. (NAS1-15648 Old Dominion University Research Foundation.) NASA CR-165668, February 1981, 21 p.
(Avail: NTIS Subject Category 64 RTOP 505-42-13)
701. Mark, William D.: Characterization, Parameter Estimation, and Aircraft Response Statistics of Atmospheric Turbulence. (NAS1-14837 Bolt Beranek and Newman Inc.) NASA CR-3463, September 1981, 234 p.
(Avail: NTIS Subject Category 05 RTOP 533-01-13)
702. Mark, William D.; and Fischer, Raymond W.: Statistics of Some Atmospheric Turbulence Records Relevant to Aircraft Response Calculations. (NAS1-14837 Bolt Beranek and Newman Inc.) NASA CR-3464, September 1981, 236 p.
(Avail: NTIS Subject Category 05 RTOP 533-01-13)
703. McGehee, C. R.; and Hodges, G. E.: Final Design and Fabrication of an Active Control System for Flutter Suppression on a Supercritical Aeroelastic Research Wing. (NAS1-14675 Boeing Military Airplane Company.) NASA CR-165714, June 1981, 394 p.
(Avail: NTIS Subject Category 05 RTOP 505-33-53)
704. Mercer, J. E.; and Geller, E. W.: Development of an Efficient Procedure for Calculating the Aerodynamic Effects of Planform Variation. (NAS1-15977 Flow Research Company.) NASA CR-3489, December 1981, 34 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-63)
705. Nitzsche, F.: Aeroelastic Analysis of a Troposkien-Type Wind Turbine Blade. (NGL 05-020-243 Stanford University.) NASA CR-165764, July 1981, 11 p.
(Avail: NTIS Subject Category 44 RTOP 505-33-53)

706. Riley, Kathleen M.: FRANOPP - Framework for Analysis and Optimization Problems - User's Guide. (NAS1-16000 Kentron International, Inc.) NASA CR-165653, January 1981, 73 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-63)
707. Shamroth, Stephen J.: A Turbulent Flow Navier-Stokes Analysis for an Airfoil Oscillating in Pitch. (NAS1-15214 Scientific Research Associates, Inc.) NASA CR-165786, September 1981, 13 p.
(Avail: STIF Subject Category 02 RTOP 505-42-13)

Journal Articles and Periodical Literature

708. Blackwell, R. H.; Murrill, R. J.; *Yeager, W. T. Jr.; and Mirick, P. H.: Wind Tunnel Evaluation of Aeroelastically Conformable Rotors. Journal of the American Helicopter Society, Volume 26, Number 2, April 1981, p. 31-39.
(Avail: AHS Subject Category 02 RTOP 505-42-13)
709. Camarda, Charles J.; and Masek, Robert V.: Design, Analysis and Tests of a Shuttle-Type Heat-Pipe-Cooled Leading Edge. Journal of Spacecraft and Rockets, Volume 18, Number 1, January/February 1981, p. 71-78.
(Avail: AIAA Subject Category 18 RTOP 506-53-73)
710. Garrick, I. E.; and Reed, Wilmer H., III: Historical Development of Aircraft Flutter. Journal of Aircraft, Volume 18, Number 11, November 1981, p. 897-912.
(Avail: AIAA Subject Category 02 RTOP 505-33-53)
711. Kaza, K.; and Kvaternik, R.: Applications of Unsteady Airfoil Theory to Rotor Wings. Journal of Aircraft, Volume 18, Number 7, July 1981, p. 600-605.
(Avail: AIAA Subject Category 39 RTOP 505-42-13)
712. Murthy, V. R.; and *Hammond, C. E.: Vibration Analysis of Rotor Blades With Pendulum Absorbers. Journal of Aircraft, Volume 18, Number 1, January 1981, p. 23-29.
(Avail: AIAA Subject Category 39 RTOP 505-10-23)
713. Sobieszczanski-Sobieski, J.; and Bhat, R. B.: Adaptable Structural Synthesis Using Advanced Analysis and Optimization Coupled by a Computer Operating System. Journal of Aircraft, Volume 18, Number 2, February 1981, p. 142-149.
(Avail: AIAA Subject Category 39 RTOP 505-02-23)
714. Thornton, Earl A.; and Wieting, Allan R.: Finite Element Thermal Analysis of Convectively-Cooled Aircraft Structures. Recent Numerical Advances in Thermal Problems, Chapter 20, 1981, p. 431-443.
(Avail: John Wiley & Sons Ltd. Subject Category 39 RTOP 506-53-53)

Meeting/Conference Papers

715. Abel, Irving; and Newsom, Jerry R.: Wind-Tunnel Evaluation of NASA Developed Control Laws for Flutter Suppression on a DC-10 Derivative Wing. Presented at the AIAA Dynamics Specialists Conference, April 8-11, 1981, Atlanta, Georgia. AIAA Paper No. 81-0639.
(Avail: AIAA Subject Category 39 RTOP 505-33-63)
716. Abel, Irving; and Newsom, Jerry: Overview of Langley Activities in Active Controls Research. Presented at the AIChE/ASME/IEEE/ISA/AIAA 1981 Joint Automatic Control Conference, June 17-19, 1981, Charlottesville, Virginia.
(Avail: NTIS, NASA TM-83149 Subject Category 39 RTOP 505-33-63)
717. Adelman, Howard M.; Haftka, Raphael T.; and Robinson, James C.: Some Aspects of Algorithm Performance and Modeling in Transient Thermal Analysis of Structures. Presented at the Symposium on "Computational Aspects of Heat Transfer in Structures," November 3-5, 1981, Hampton, Virginia.
(Avail: NTIS, NASA CP-2216 (Pending) Subject Category 34 RTOP 506-53-53)
718. Adelman, Howard M.; Haftka, Raphael T.; and Robinson, James C.: Some Aspects of Algorithm Performance and Modeling in Transient Thermal Analysis of Structures. Presented at the ASME Winter Annual Meeting, November 15-20, 1981, Washington, D.C. (Also available from NTIS, NASA TM-83190.)
(Avail: ASME Subject Category 34 RTOP 506-53-53)
719. Bennett, Robert M.; and Abel, Irving: Application of a Flight Test and Data Analysis Technique to Flutter of a Drone Aircraft. Presented at the AIAA Dynamics Specialists Conference, April 9-10, 1981, Atlanta, Georgia. AIAA Paper No. 81-0652.
(Avail: AIAA Subject Category 39 RTOP 505-33-53)
720. Blosser, M. L.: Transient Thermal Analysis of a Titanium Multiwall Thermal Protection System. Presented at the Symposium on "Computational Aspects of Heat Transfer in Structures," November 3-5, 1981, Hampton, Virginia.
(Avail: NTIS, NASA CP-2216 (Pending) Subject Category 18 RTOP 506-53-53)
721. Camarda, Charles J.: Evaluation of an Improved Finite-Element Thermal Stress Calculation Technique. Presented at the Symposium on "Computational Aspects of Heat Transfer in Structures," November 3-5, 1981, Hampton, Virginia.
(Avail: NTIS, NASA CP-2216 (Pending) Subject Category 39 RTOP 506-53-53)
722. Dowell, E. H.; Williams, M. H.; and Bland, S. R.: Linear Nonlinear Behavior in Unsteady Transonic Aerodynamics. Presented at the AIAA Dynamics Specialists Conference, April 9-10, 1981, Atlanta, Georgia. AIAA Paper No. 81-0643.
(Avail: AIAA Subject Category 02 RTOP 505-33-53)
723. Edwards, John W.: Flight Test Results of an Active Flutter Suppression System Installed on a Remotely Piloted Research Vehicle. Presented at the AIAA Dynamics Specialists Conference, April 9-10, 1981, Atlanta, Georgia. AIAA Paper No. 81-0655.
(Avail: AIAA Subject Category 05 RTOP 505-33-53)

724. Garrick, I. E.; and Reed, Wilmer H., III: Historical Development of Flutter. Presented at the AIAA/ASME/ASCE/AHS 22nd Structures, Structural Dynamics and Materials Conference, April 6-8, 1981, Atlanta, Georgia. AIAA Paper No. 81-0591.
(Avail: AIAA Subject Category 02 RTOP 505-33-53)
725. Giles, Gary L.; and Vallas, Maria: Use of an Engineering Data Management System in the Analysis of Space Shuttle Orbiter Tiles. Presented at the AIAA Computers in Aerospace III Conference, October 26-28, 1981, San Diego, California. AIAA Paper No. 81-2192. (Also available from NTIS, NASA TM-83215.)
(Avail: AIAA Subject Category 61 RTOP 505-33-63)
726. Hajela, Prabhat; and Sobieszczanski-Sobieski, J.: The Controlled Growth Method - A Tool for Structural Optimization. Presented at the AIAA/ASME/ASCE/AHS 22nd Structures, Structural Dynamics and Materials Conference, April 6-8, 1981, Atlanta, Georgia. AIAA Paper No. 81-0549.
(Avail: AIAA Subject Category 39 RTOP 505-33-63)
727. Hertz, Terrence J.; Shirk, Michael H.; Ricketts, Rodney H.; and Weisshaar, Terrence A.: Aeroelastic Tailoring with Composites Applied to Forward Swept Wings. Presented at the Fifth DOD/NASA Conference on Fibrous Composites in Structural Design, January 27-29, 1981, New Orleans, Louisiana.
(Avail: Naval Air Dev. Ctr. Subject Category 39 RTOP 505-43-33)
728. Marlow, M. B.; Whetstone, W. D.; and Robinson, J. C.: The SPAR Thermal Analyzer--Present and Future. Presented at the Symposium on "Computational Aspects of Heat Transfer in Structures," November 3-5, 1981, Hampton, Virginia.
(Avail: NTIS, NASA CP-2216 (Pending) Subject Category 34 RTOP 506-53-53)
729. Newsom, Jerry R.; and Abel, Irving: Some Experiences With Active Control of Aeroelastic Response. Presented at the Advanced Flight Control Symposium, August 5-7, 1981, Colorado Springs, Colorado. (Also available from NITS, NASA TM-83179.)
(Avail: Naval Air Development Center Subject Category 39 RTOP 505-33-63)
730. Newsom, Jerry R.; and Mukhopadhyay, Vivekananda: Application of Constrained Optimization to Active Control of Aeroelastic Response. Presented at the AICHE/ASME/IEEE/ISA/AIAA 1981 Joint Automatic Control Conference, June 17-19, 1981, Charlottesville, Virginia. (Also available from NTIS, NASA TM-83150.)
(Avail: University of Virginia, Proceedings Subject Category 39 RTOP 505-33-63)
731. Newsom, Jerry R.; and Pototzky, Anthony S.: Comparison of Analysis and Flight Test Data for a Drone Aircraft with Active Flutter Suppression. Presented at the AIAA Dynamics Specialists Conference, April 9-10, 1981, Atlanta, Georgia. AIAA Paper No. 81-0640.
(Avail: NTIS, NASA TM-83145 Subject Category 39 RTOP 505-33-53)

732. Perry, Boyd, III: Qualitative Comparison of Calculated Turbulence Responses With Wind-Tunnel Measurements for a DC-10 Derivative Wing With an Active Control System. Presented at the AIAA Dynamics Specialists Conference, April 9-10, 1981, Atlanta, Georgia. AIAA Paper No. 81-0567. (Also available from NTIS, NASA TM-83144.)
(Avail: AIAA Subject Category 39 RTOP 505-33-63)
733. Puster, Richard L.; Karns, John R.; Vasquez, Peter; and Kelliher, Warren C.: Ceramic and Coating Applications in the Hostile Environment of a High Temperature Hypersonic Wind Tunnel. Presented at the American Ceramic Society 5th Annual Conference on Composites and Advanced Materials, January 18-22, 1981, Cocoa Beach, Florida.
(Avail: ACS Subject Category 27 RTOP 506-53-73)
734. Reed, Wilmer H., III: Aeroelasticity Matters: Some Reflections on Two Decades of Testing in the NASA Langley Transonic Dynamics Tunnel. Presented at the International Symposium on Aeroelasticity, October 5-7, 1981, Nuremberg, Germany.
(Avail: Institute of Aeroelasticity DFVLR Subject Category 02 RTOP 505-33-53)
735. Robinson, J. C.; Riley, K.; and Haftka, R. T.: Evaluation of the SPAR Thermal Analyzer of the CYBER-203 Computer. Presented at the Symposium on "Computational Aspects of Heat Transfer in Structures," November 3-5, 1981, Hampton, Virginia.
(Avail: NTIS, NASA CP-2216 (Pending) Subject Category 34 RTOP 506-53-53)
736. Rogers, J. L., Jr.; Dovi, A. R.; and Riley, K. M.: Distributing Structural Optimization Software Between a Mainframe and a Minicomputer. Presented at the Second International Conference and Exhibition on Engineering, Software, March 24-26, 1981, London, England.
(Avail: ENGSOFT, Proceedings Subject Category 61 RTOP 505-33-63)
737. Rowe, W. S.; and Cunningham, H. J.: On the Convergence of Unsteady Generalized Forces. Presented at the AIAA Dynamics Specialists Conference, April 9-10, 1981, Atlanta, Georgia. AIAA Paper No. 81-0647.
(Avail: AIAA Subject Category 02 RTOP 505-33-53)
738. Ruhlin, Charles L.; and Murphy, Arthur C.: Transonic Flutter and Gust-Response Tests and Analyses of a Wind-Tunnel Model of a Torsion-Free-Wing Fighter Airplane. Presented at the AIAA Dynamics Specialists Conference, April 9-10, 1981, Atlanta, Georgia. AIAA Paper No. 81-0654.
(Avail: AIAA Subject Category 05 RTOP 505-33-53)
739. Ruhlin, Charles L.; and Pratt-Barlow, Charles R.: Transonic Flutter Study of a Wind-Tunnel Model of an Arrow-Wing Supersonic Transport. Presented at the AIAA Dynamics Specialists Conference, April 9-10, 1981, Atlanta, Georgia. AIAA Paper No. 81-0654.
(Avail: AIAA Subject Category 05 RTOP 533-01-13)

740. Shideler, John L.; Kelly, H. Neale; Avery, Don E.; Blosser, Max L.; and Adelman, Howard M.: Multiwall TPS - An Emerging Concept. Presented at the AIAA/ASME/ASCE/AHS 22nd Structures, Structural Dynamics and Materials Conference, April 6-8, 1981, Atlanta, Georgia. AIAA Paper No. 81-0586. (Avail: AIAA Subject Category 18 RTOP 506-53-73)
741. Shore, Charles P.: Status Report on Development of a reduced Basis Technique for Transient Thermal Analysis. Presented at the Symposium on "Computational Aspects of Heat Transfer in Structures," November 3-5, 1981, Hampton, Virginia. (Avail: NTIS, NASA CP-2216 (Pending) Subject Category 34 RTOP 506-53-53)
742. Sobieszczanski-Sobieski, Jaroslaw; Barthelemy, Jean-Francois; and Riley, Kathleen M.: Sensitivity of Optimum Solutions to Problem Parameters. Presented at the AIAA/ASME/ASCE/AHS 22nd Structures, Structural Dynamics and Materials Conference, April 6-8, 1981, Atlanta, Georgia. AIAA Paper No. 81-0548. (Also available from NTIS, NASA TM-83134.) (Avail: AIAA Subject Category 39 RTOP 505-33-63)
743. Sobieszczanski-Sobieski, Jaroslaw; and Rogers, James L., Jr.: A Programming System for Research and Applications in Structural Optimization. Presented at the International Symposium on Optimum Structural Design, The 11th Naval Structural Mechanics Symposium, October 19-22, 1981, Tucson, Arizona. (Also available from NTIS, NASA TM-83191.) (Avail: University of Arizona, Proceedings Subject Category 05 RTOP 505-33-63)
744. Thornton, Earl A.; Dechaumphai, Pramote; Wieting, Allan, R.; and Tamma, Kumar K.: Integrated Transient Thermal-Structural Finite Element Analysis. Presented at the AIAA/ASME/ASCE/AHS 22nd Structures, Structural Dynamics and Materials Conference, April 6-8, 1981, Atlanta, Georgia. AIAA Paper No. 81-0480. (Avail: AIAA Subject Category 34 RTOP 506-53-53)
745. Yates, E. Carson; Wynne, Eleanor C.; Farmer, Moses G.; and Desmarais, Robert N.: Prediction of Transonic Flutter for a Supercritical Wing by Modified Strip Analysis and Comparison With Experiment. Presented at the AIAA Dynamics Specialists Conference, April 9-10, 1981, Atlanta, Georgia. AIAA Paper No. 81-0609. (Avail: AIAA Subject Category 39 RTOP 505-33-53)
746. *Young, Warren H., Jr.: Fluid Mechanics Mechanisms in the Stall Process of Airfoils for Helicopters. Presented at the Symposium on Numerical and Physical Aspects of Aerodynamic Flows, January 21-22, 1981, Long Beach, California. (Avail: Dr. Turner Cebeci, Douglas Aircraft-Long Beach, Proceedings Subject Category 02 RTOP 505-42-13)

Computer Programs

No computer programs.

Tech Briefs

747. Rowe, William S. (Boeing Company): Unsteady Subsonic Loadings Due to Control-Surface Motion. NASA Tech Brief LAR-12802. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)
748. Schmit, L. A.; and Fleury, C. (University of California, Los Angeles): Resizing Structures for Minimum Weight. NASA Tech Brief LAR-12699. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)
749. Thornton, Earl A.; and Sawyer, Lynn M. (Old Dominion University Research Foundation): Graphics for Finite-Element Analysis. NASA Tech Brief LAR-12793. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)
750. Wieting, Allan R.: Finite-Element Analysis of Forced Convection and Conduction. NASA Tech Brief LAR-12794. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)

Patents

751. Couch, Lana M.: Wind Tunnel Supplementary Mach Number Minimum Section Insert. U.S. Patent 4,286,460. Issued 1981.
(Avail: U.S. Patent & Trademark Office Subject Category 09)
752. Jeffery, Philip A. E.; and Huber, Rudolph F.: Compensating Linkage for Main Rotor Control (NAS1-13000 Sikorsky Aircraft Division.) U.S. Patent 4,245,956. Issued 1981.
(Avail: U.S. Patent & Trademark Office Subject Category 08)

Oral Presentations to Conferences/Workshops

753. Cazier, F. W., Jr.; Watson, Judith J.; Doggett, Robert V., Jr.; Sandford, Maynard C.; and Ricketts, Rodney H.: Presented at the Fifth Annual Status Review of the NASA Aircraft Energy Efficiency (ACEE) Energy Efficient Transport Program, Dryden Flight Research Center, Edwards, California, September 14-15, 1981.
754. Molusis, J.; *Hammond, C. E.; and *Cline, J. H.: A Unified Approach to the Optimal Design of Adaptive and Gain Scheduled Controllers to Achieve Minimum Helicopter Rotor Vibration. Presented at the 37th American Helicopter Forum, May 17-20, 1981, New Orleans, Louisiana.

*Army Structures Laboratory, USARTL (AVRADCOM)

755. Murrow, H. N.: Reflections on the First Three Flight Flutter Tests in the NASA Drones for Aerodynamic and Structural Testing (DATS) Program. Presented at the AIAA/SETP/SFTE/SAE 1st Flight Testing Conference, November 11-13, 1981, Las Vegas, Nevada.
756. Powers, R. W.; Wood, E. R.; and *Cline, J. H.: Design Update on the NASA/Army/Hughes HHC Flight Test Program. Presented at the American Helicopter Society Specialists: Meeting on Helicopter Vibration "Technology for the Jet Smooth Ride," November 2-4, 1981, Hartford, Connecticut.
757. Reed, W. H., III: Aeroelasticity Matters: Some Reflections on Two Decades of Testing in the NASA-Langley Transonic Dynamics Tunnel. Presented at the Aerospace Flutter and Dynamics Council Meeting, November 4-5, 1981, Orlando, Florida.
758. Rogers, Jim: Distributing Structural Optimization Software Between a Mainframe and a Minicomputer. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
759. Rogers, Jim: Overview of Session I: Software Systems for Designing, Analyzing and Optimizing Numerical Models. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
760. Walton, W. C., Jr.: Overview of Structural Dynamics Research. Presented at the Army Workshop on Structural Dynamics and Flight Loads Determination, July 14, 1981, Fort Eustis, Virginia.
761. Watson, Judith J.: Elastic Deformation Effects on Aerodynamic Loads. Presented at the 1981 Annual Meeting of the Virginia Academy of Science May 12-15, 1981, Norfolk, Virginia.

PUBLICATIONS FOR OFFICE OF DIRECTOR FOR AERONAUTICS

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Periodical Literature

No journal articles and periodical literature.

Meeting/Conference Papers

762. Bower, Robert E.: Recent Progress in Research and Technology Applicable to Civil Air Transports. Presented at the First International Meeting on Transportation Research, November 11-14, 1981, Amalfi, Italy.
(Avail: ASME Subject Category 03 RTOP 505-43-53)

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

Oral Presentations to Conferences/Workshops

763. Bower, Robert E.: The Promise of Advanced Technology for Future Air Transports. Presented at the Society of Professional Engineers National Engineers Week Meeting, February 26, 1981, Newark, New Jersey.

PUBLICATIONS FOR AERONAUTICAL SYSTEMS DIVISION

Formal Reports

764. Anon: Tactical Aircraft Research and Technology - Volume I. NASA CP-2162, Part 1, March 1981, 409 p.
(Avail: STIF Subject Category 01 RTOP 530-03-13)
765. Anon: Tactical Aircraft Research and Technology - Volume I. NASA CP-2162, Part 2, March 1981, 489 p.
(Avail: STIF Subject Category 01 RTOP 530-03-13)
766. Anon: Tactical Aircraft Research and Technology - Volume II. NASA CP-2163, March 1981, 109 p.
(Avail: STIF Subject Category 01 RTOP 530-03-13)
767. Anon: Tactical Aircraft Research and Technology - Volume III. NASA CP-2164, March 1981, 196 p.
(Avail: STIF Subject Category 01 RTOP 530-03-13)
768. Foss, Willard E., Jr.: A Computer Technique for Detailed Analysis of Mission Radius and Maneuverability Characteristics of Fighter Aircraft. NASA TP-1837, March 1981, 64 p.
(Avail: NTIS Subject Category 02 RTOP 530-03-13)
769. Morris, Charles E. K., Jr.: Parametric Study of Microwave-Powered High-Altitude Airplane Platforms Designed for Linear Flight. NASA TP-1918, November 1981, 72 p.
(Avail: NTIS Subject Category 05 RTOP 530-01-13)
770. Morris, Charles E. K., Jr.; and Liu, Grace C.: Performance Evaluation of a High-Altitude Airplane Platform With a Cryogenically Fueled Engine. NASA TM-83184, December 1981, 37 p.
(Avail: STIF Subject Category 05 RTOP 530-01-13)
771. Tuttle, Marie H.; and Maddalon, Dal V.: U.S. and U.S.S.R. Military Aircraft and Missile Aerodynamics (1970-1980) - A Selected, Annotated Bibliography. Volume I. NASA TM-81951, August 1981, 70 p.
(Avail: NTIS Subject Category 05 RTOP 530-03-13)
772. Tuttle, Marie H.; and Maddalon, Dal V.: U.S. and U.S.S.R. Military Aircraft and Missile Aerodynamics (1970-1980) - A Selected, Annotated Bibliography. Volume II. NASA TM-83113, August 1981, 33 p.
(Avail: STIF Subject Category 05 RTOP 530-03-13)
773. Tuttle, Marie H.; and Maddalon, Dal V.: U.S. and U.S.S.R. Military Aircraft and Missile Aerodynamics (1970-1980) - A Selected, Annotated Bibliography. Volume III. NASA TM-83114, October 1981, 60 p.
(Avail: STIF Subject Category 05 RTOP 530-03-13)
774. Yin Xieyuan (Grace C. Liu, transl.): An Approximate Analytical Method for Vortex-Lift and Center of Pressure on the Slender Wing. NASA TM-83198, December 1981, 10 p.
(Avail: NTIS Subject Category 01 RTOP 530-04-13)

Quick-Release Technical Memorandums

775. Morris, Charles E. K., Jr.: Analytical Study of the Cruise Performance of a Class of Remotely Piloted, Microwave-Powered, High-Altitude Airplane Platforms. NASA TM-81969, April 1981, 76 p.
(Avail: NTIS Subject Category 05 RTOP 530-01-13)
776. Morris, Charles E. K., Jr.: A Flight Investigation of Blade-Section Aerodynamics for a Helicopter Main Rotor Having 10-64C Airfoil Sections. NASA TM-83226, November 1981, 181 p.
(Avail: NTIS Subject Category 02 RTOP 530-04-03)
777. Witcofski, Robert D.: Dispersion of Flammable Clouds Resulting From Large Spills of Liquid Hydrogen. NASA TM-83131, May 1981, 9 p.
(Avail: NTIS Subject Category 28 RTOP 505-31-70)

Contractor Reports

778. Ausrotas, Raymond A.: Predicting the Impact of New Technology Aircraft on International Air Transportation Demand. (NAS1-15268 Massachusetts Institute of Technology.) NASA CR-165654, January 1981, 51 p.
(Avail: NTIS Subject Category 03 RTOP 530-04-13)
779. Bruckman, F. A.; Clauss, J. S., Jr.; Bangert, L. H.; Sakata, I. F.; Godby, L.; and Sarames, G. N.: Integrated Technology Studies for Advanced Supersonic Cruise Vehicles. (NAS1-16048 Lockheed-California Company.) NASA CR-165819, September 1981. 382 p.
(Avail: STIF Subject Category 01 RTOP 533-01-43)
780. DaCosta, Roy A.; Espil, G. J.; Everest, D. L., Jr.; Lovell, W. A.; Martin, Glenn L.; Swanson, E. E.; and Walkley, Kenneth B.: Concept Development Studies for a Mach 2.7 Supersonic Cruise Business Jet. (NAS1-16000 Kentron International, Inc.) NASA CR-165705, April 1981, 118 p.
(Avail: STIF Subject Category 05 RTOP 533-01-43)
781. Govindaraj, K. S.; Lyons, J. R.; and Chalk, C. R.: Evaluation of Handling Qualities of Flexible Aircraft: Phase 1 - Modeling Procedures. (F33615-79-C-3618 and L-75228A Calspan Advanced Technology Center.) NASA CR-165822, December 1981, 77 p.
(Avail: STIF Subject Category 05 RTOP 530-04-13)
782. Johnson, E. S.; and McKinnon, R. A.: Cooperative Wind Tunnel Tests of Douglas Advanced Supersonic Technology Jet Noise Suppressor - Using RR Viper 601 Engine. (NAS1-14601 McDonnell Douglas Corporation.) NASA CR-165672, April 1981, 160 p.
(Avail: STIF Subject Category 05 RTOP 533-01-43)
783. Martin, G. L.; Everest, D. L., Jr.; Lovell, W. A.; Price, J. E.; Walkley, K. B.; and Washburn, G. F.: Design and Analysis of a Fuel-Efficient Single-Engine, Turboprop-Powered, Business Airplane. (NAS1-16000 Kentron International, Inc.) NASA CR-165768, August 1981, 36 p.
(Avail: NTIS Subject Category 05 RTOP 530-01-13)

784. Muehlbauer, J. C.; Hewell, J. G., Jr.; Lindenbaum, S. P.; Randall, C. C.; Searle, N.; and Stone, F. R., Jr.: Turboprop Cargo Aircraft Systems Study. (NAS1-15708 Lockheed-Georgia Company.) NASA CR-165813, November 1981, 234 p.
(Avail: NTIS Subject Category 05 RTOP 505-43-33)
785. Rowe, W. T.; et al.: Technology Study for Advanced Supersonic Cruise Vehicles. (NAS1-16147 McDonnell Douglas Corporation.) NASA CR-165723, June 1981, 435 p.
(Avail: STIF Subject Category 02 RTOP 533-01-43)
786. Sakata, I. Frank: Systems Study of Transport Aircraft Incorporating Advanced Aluminum Alloys. (NAS1-16434 Lockheed-California Company.) NASA CR-165820, 1981.
(Avail: NTIS (Pending) Subject Category 05 RTOP 530-04-13)
787. Smith, Paul M.; DeYoung, John; Lovell, William A.; Price, Jack E.; and Washburn, G. Fred: A Study of High-Altitude Manned Research Aircraft Employing Strut-Braced Wings of High-Aspect-Ratio. (NAS1-16000 Kentron International, Inc.) NASA CR-159262, February 1981, 91 p.
(Avail: NTIS Subject Category 05 RTOP 530-04-13)
788. Staff of Boeing Commercial Airplane Company: Advanced Concept Studies for Supersonic Vehicles. (NAS1-14623 and NAS1-16150 Boeing Commercial Airplane Company.) NASA CR-165771, October 1981, 352 p.
(Avail: STIF Subject Category 05 RTOP 533-01-43)
789. Staff of Douglas Aircraft Company: Laminar Flow Control SPF/DB Feasibility Demonstration. (NAS1-16425 McDonnell Douglas Corporation.) NASA CR-165818, October 1981.
(Avail: NTIS Subject Category 01 RTOP 534-01-13)
790. Syberg, J.; and Turner, L.: Supersonic Test of a Mixed-Compression Axisymmetric Inlet at Angles of Incidence. (NAS1-16150 Boeing Commercial Airplane Company.) NASA CR-165686, April 1981, 132 p.
(Avail: STIF Subject Category 07 RTOP 533-01-43)
791. Wald, G. G.: Supersonic Cruise Vehicle Technology Assessment Study of an Over/Under Engine Concept - Advanced Aluminum Alloy Evaluation. (NAS1-14625 Lockheed-California Company.) NASA CR-165676, May 1981, 207 p.
(Avail: STIF Subject Category 26 RTOP 533-01-43)
792. Walkley, K. B.; Espil, G. J.; Lovell, W. A.; Martin, G. L.; and Swanson, E. E.: Concept Development of a Mach 2.7 Advanced Technology Transport Employing Wing-Fuselage Blending. (NAS1-16000 Kentron International, Inc.) NASA CR-165739, December 1981, 70 p.
(Avail: STIF Subject Category 01 RTOP 533-01-43)

Journal Articles and Periodical Literature

793. Williams, Louis J.; and Galloway, Thomas L.: Design for Supercommuters. Astronautics & Aeronautics, Volume 19, Number 2, February 1981, p. 20-30.
(Avail: AIAA Subject Category 01 RTOP 530-01-13)

794. Winston, Matthew M.; and Conner, D. William: Air Cargo Market Outlook and Impacts Via the NASA CLASS Project (SAE Paper No. 801058). 1980 SAE Transactions, Volume 89, Section 3, September 1981, p. 3310-3321.
(Avail: SAE Subject Category 03 RTOP 530-04-13)

Meeting/Conference Papers

795. Driver, Cornelius: Progress in Supersonic Cruise Technology. Presented at the AIAA Aircraft Systems and Technology Meeting, August 11-13, 1981, Dayton, Ohio. AIAA Paper No. 81-1687.
(Avail: AIAA Subject Category 01 RTOP 533-01-43)
796. Heyson, Harry H.: Some Wake-Related Operational Limitations of Rotorcraft. Presented at the Illinois Department of Transportation Fourth Annual Midwest Helicopter Safety Seminar, February 3-5, 1981, Joliet, Illinois.
(Avail: NTIS, NASA TM-81920 Subject Category 02 RTOP 530-04-13)
797. Muehlbauer, J. C.; and Morris, S. J.: Advanced Turboprop Cargo Aircraft Systems Study. Presented at the AIAA Aircraft Systems and Technology Meeting, August 11-13, 1981, Dayton, Ohio. AIAA Paper No. 81-1684.
(Avail: AIAA Subject Category 07 RTOP 530-04-13)
798. Spearman, M. Leroy: Historical Trend in the Research and Development of Aircraft. Presented at the AIAA Aircraft Systems and Technology Meeting, August 11-13, 1981, Dayton, Ohio. AIAA Paper No. 81-1613.
(Avail: AIAA Subject Category 01 RTOP 530-03-13)
799. Williams, Louis J.; and Snow, Daniel B.: Can Advanced Technology Improve Future Commuter Aircraft? Presented at the AIAA Aircraft Systems and Technology Meeting, August 11-13, 1981, Dayton, Ohio. AIAA Paper No. 81-1729.
(Avail: AIAA Subject Category 01 RTOP 530-01-13)
800. Winston, Matthew M.: Technology and Market Prospects for Future Airfreighters. Presented at the International Cargo Handling Co-ordination Association (ICHCA) Conference, June 7-12, 1981, Edmonton, Alberta, Canada.
(Avail: ICHCA, Ottawa, Canada, Proceedings Subject Category 03 RTOP 530-04-13)
801. Witcofski, Robert D.: Dispersion of Flammable Vapor Clouds Resulting From Large Spills of Liquid Hydrogen. Presented at the ASME/AIAA/ACS/AIChE/ANS/IEEE/SAE 16th Intersociety Energy Conversion Engineering Conference, August 9-14, 1981, Atlanta, Georgia. Paper No. 819630.
(Avail: ASME, Proceedings Subject Category 28 RTOP 505-31-70)
802. Witcofski, Robert D.: Experimental Measurements of the Dispersion of Flammable Clouds Formed by Liquid Hydrogen Spills. Presented at the JANNAF Safety and Environmental Protection Annual Meeting, November 17-19, 1981, Kennedy Space Center, Florida.
(Avail: CPIA Subject Category 28 RTOP 505-31-70)

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

Oral Presentations to Conferences/Workshops

- 803. Dollyhigh, Samuel M.: Multiple Fuselage Supersonic Configurations. Presented at the Supersonic Cruise Research (SCR) Technology Studies Review, April 1-2, 1981, Hampton, Virginia.
- 804. Driver, Cornelius: NASA's Fundamental R&T Thrusts and Potential Payoffs. Presented at the AIAA Conference on Outlook for Aircraft Systems and Technology, February 11-13, 1981, Los Angeles, California.
- 805. Driver, Cornelius: NASA's Fundamental R&T Thrusts and Potential Payoffs. Presented at the AIAA Aircraft Systems and Technology Conference, August 3-4, 1981, Washington, D.C.
- 806. Driver, Cornelius: NASA's Fundamental R&T Thrusts and Potential Payoffs. Presented at the AIAA Aircraft Systems and Technology Conference, August 20-21, 1981, New York, New York.
- 807. Houbolt, John C.: Rolling Moment Induced by Non-Uniform Spanwise Gusts. Presented at the AIAA 19th Aerospace Sciences Meeting, January 12-15, 1981, St. Louis, Missouri.
- 808. Spearman, M. Leroy: Some Testing and Analysis Techniques Applicable to the Aerodynamic Assessment of Airplanes and Missiles. Presented at the 1981 Annual Meeting of the Virginia Academy of Science, May 12-15, 1981, Norfolk, Virginia.
- 809. Williams, Louis J.: Commuter Aircraft Technology. Presented at the 1981 SAE Business Aircraft Meeting, April 7-10, 1981, Wichita, Kansas.
- 810. Williams, Louis J.: Commuter Aircraft Technology - Ongoing Research, Future Plans, and Potential Benefits. Presented at the 1981 (CAAA) Commuter Airline Association of America Spring Convention, June 23-25, 1981, Washington, D.C.
- 811. Williams, Louis J.: NASA Commuter Transport Technical Research. Presented at the Experimental Aircraft Association 1981 Annual Convention, August 1-8, 1981, Oshkosh, Wisconsin.
- 812. Williams, Louis J.: Fixed Wing Commuter Aircraft Status and Projections. Presented at the NASA/APA Conference on Planning for Rotorcraft and Commuter Air Transportation, August 31-September 4, 1981, Monterey, California.

PUBLICATIONS FOR LOW-SPEED AERODYNAMICS DIVISION

Formal Reports

813. Abbott, Terence S.; and *Moen, Gene C.: Effect of Display Size on Utilization of Traffic Situation Display for Self-Spacing Task. NASA TP-1885, AVRADCOM TR 81-B-4, August 1981, 28 p.
(Avail: NTIS Subject Category 03 RTOP 534-04-13)
814. Bowman, James S., Jr.; and White, William L.: Spin-Tunnel Investigation of a 1/36-Scale Model of the Grumman F-14A Airplane - COORD NO. N-AM-153. NASA TM SX-81861, April 1981, 37 p.
(Avail: NASC Subject Category 02 RTOP 505-43-13)
815. Kelley, Wendell W.; and Enevoldson, Einar K.: Limited Evaluation of an F-14A Airplane Utilizing an Aileron-Rudder Interconnect Control System in the Landing Configuration. NASA TM-81972, December 1981, 37 p.
(Avail: NTIS Subject Category 08 RTOP 505-43-13)
816. Satran, Dale R.: Wind-Tunnel Investigation of the Tail-Spoiler Concept for Stall Prevention on General Aviation Airplanes. NASA TM-83208, November 1981, 38 p.
(Avail: NTIS Subject Category 01 RTOP 505-41-13)
817. Stickle, Joseph W. (compiler): 1980 Aircraft Safety and Operating Problems - Part 1. NASA CP-2170, March 1981, 389 p.
(Avail: NTIS Subject Category 03 RTOP 505-44-23)
818. Stickle, Joseph W. (compiler): 1980 Aircraft Safety and Operating Problems - Part 2. NASA CP-2170, March 1981, 413 p.
(Avail: NTIS Subject Category 03 RTOP 505-44-23)
819. Yip, Long P.; and Murri, Daniel G.: Effects of Vortex Flaps on the Low-Speed Aerodynamic Characteristics of an Arrow Wing. NASA TP-1914, November 1981, 62 p.
(Avail: NTIS Subject Category 01 RTOP 505-43-13)

Quick-Release Technical Memorandums

820. Deal, Perry L.; Keyser, Gerald L., Jr.; Fisher, Bruce D.; and Crabill, Norman L.: Thunderstorm Hazards Flight Research - Storm Hazards '80 Overview. NASA TM-81974, June 1981, 28 p.
(Avail: NTIS Subject Category 03 RTOP 505-44-13)
821. Kjølgaard, Scott O.; and Paulson, John W., Jr.: Effect of Sweep and Aspect Ratio on the Longitudinal Aerodynamics of a Spanloader Wing In- and Out-of-Ground Effect. NASA TM-80199, June 1981, 165 p. (Supersedes NASA TM-80199, Issued January 1980.)
(Avail: NTIS Subject Category 02 RTOP 505-43-23)

*Army Structures Laboratory, USARTL (AVRADCOM)

Contractor Reports

822. Ace, R. E.: Candidate CDTI Procedures Study. (NAS1-16247 Systems Control, Inc. (Vt).) NASA CR-165673, January 1981, 77 p.
(Avail: NTIS Subject Category 03 RTOP 534-04-13)
823. Bragg, M. B.: A Numerical Simulation of the Dispersal of Aerial Sprays. (L-7965B The Ohio State University.) NASA CR-165816, November 1981, 109 p.
(Avail: IAC Subject Category 61 RTOP 505-41-83)
824. Doty, J. L.; Bachalo, W. D.; Hildebrand, B. P.; and Trolinger, J. D.: Low Speed Aerodynamic Holography Measurements. (NAS1-16201 Spectron Development Laboratories, Inc.) NASA CR-165769, June 1981, 60 p.
(Avail: STIF Subject Category 35 RTOP 505-42-23)
825. Hanisch, B.; Ernst, H.; and Johnston, R.: Cockpit Simulation Study of Use of Flight Path Angles for Instrument Approaches. (NAS1-16144 Bendix Corporation.) NASA CR-165708, May 1981, 56 p.
(Avail: NTIS Subject Category 06 RTOP 534-04-13)
826. Lan, C. Edward: Calculation of Lateral-Directional Stability Derivatives of Wings by a Nonplanar Quasi-Vortex-Lattice Method. (L-7198B Kohlman Aviation Corporation.) NASA CR-165659, January 1981, 133 p.
(Avail: IAC Subject Category 02 RTOP 530-01-13)
827. McCormick, Barnes W.: The Prediction of Normal Force and Rolling Moment Coefficients for a Spinning Wing. (L-13435B The Pennsylvania State University.) NASA CR-165680, February 1981, 21 p.
(Avail: NTIS Subject Category 05 RTOP 505-41-13)
828. Miley, Stan J.; Cross, Ernest J., Jr.; Owens, John K.; and Lawrence, David L.: An Experimental Investigation of the Aerodynamics and Cooling of a Horizontally-Opposed Air-Cooled Aircraft Engine Installation. (NSG-1083 Mississippi State University.) NASA CR-3405, March 1981, 151 p.
(Avail: NTIS Subject Category 02 RTOP 505-41-13)
829. Ormsbee, Allen I.; Bragg, Michael B.; and Maughmer, Mark D.: The Development of Methods for Predicting and Measuring Distribution Patterns of Aerial Sprays. (NGR-1434 University of Illinois at Urbana-Champaign.) NASA CR-165652, January 1981, 65 p.
(Avail: NTIS Subject Category 01 RTOP 505-41-83)
830. Plumer, J. Anderson: Investigation of Severe Lightning Strike Incidents to Two USAF F-106A Aircraft. (NAS1-15884 Lightning Technologies, Inc.) NASA CR-165794, September 1981, 18 p.
(Avail: NTIS Subject Category 03 RTOP 505-44-13)
831. Roskam, J.; and Williams, M.: Comparison of Selected Lift and Sideslip Characteristics of the Ayres Thrush S2R-800, Winglets Off and Winglets On, to Full-Scale Wind Tunnel Data. (NSG-1574 University of Kansas Center for Research, Inc.) NASA CR-165710, April 1981, 116 p.
(Avail: NTIS Subject Category 02 RTOP 505-41-83)

832. Sorenson, John A.; and Waters, Mark H.: Generation of Optimum Vertical Profiles for an Advanced Flight Management System. (NAS1-15497 Analytical Mechanics Associates, Inc.) NASA CR-165674, March 1981, 161 p.
(Avail: NTIS Subject Category 03 RTOP 534-04-13)

Journal Articles and Periodical Literature

833. DiCarlo, Daniel J.; Stough, H. Paul; and Patton, James M., Jr.: Effects of Wing Leading-Edge Design on the Spin Characteristics of a General Aviation Airplane. Journal of Aircraft, Volume 18, Number 9, September 1981, p. 786-792.
(Avail: AIAA Subject Category 02 RTOP 505-41-13)
834. Morello, Samuel A.: Flight Test Experience Using Advanced Airborne Equipment in a Time-Eased Metered Traffic Environment (SAE Paper No. 801207). 1980 SAE Transactions, Volume 89, Section 4, September 1981, p. 3695-3703.
(Avail: SAE Subject Category 03 RTOP 534-04-13)
835. Ormsbee, A. I.; Bragg, M. B.; Maughmer, M. D.; and Jordan, F. L.: Scaling Wake-Particle Interactions for Aerial Applications Research. Journal of Aircraft, Volume 18, Number 7, July 1981, p. 592-596.
(Avail: AIAA Subject Category 02 RTOP 516-57-03)
836. Van Dam, Cornelis P.; Holmes, Bruce J.; and Pitts, Calvin U.: Effect of Winglets on Performance and Handling Qualities of General Aviation Aircraft. Journal of Aircraft, Volume 18, Number 7, July 1981, p. 587-591.
(Avail: AIAA Subject Category 08 RTOP 505-41-83)

Meeting/Conference Papers

837. Banks, D. W.; Quinto, P. F.; and Paulson, J. W., Jr.: Thrust-Induced Effects on Low-Speed Aerodynamics of Fighter Aircraft. Presented at the AIAA/NASA V/STOL Conference, December 7-9, 1981, Palo Alto, California. AIAA Paper No. 81-2612.
(Avail: AIAA Subject Category 02 RTOP 505-43-23)
838. Bilanin, Alan J.; Teske, Milton E.; and Morris, Dana J.: Predicting Aerially Applied Particle Deposition by Computer. Presented at the 1981 SAE Business Aircraft Meeting and Exposition, April 7-10, 1981, Wichita, Kansas. SAE Paper No. 810607.
(Avail: SAE Subject Category 02 RTOP 505-41-83)
839. Chambers, Joseph R.; DiCarlo, Daniel J.; and Johnson, Joseph L., Jr.: Applications of Dynamic Stability Parameters to Problems in Aircraft Dynamics. Presented at the AGARD Lecture Series on Dynamic Stability Parameters, March 2-5, 1981, Moffett Field, California, and March 16-19, Rhode St. Genese, Belgium.
(Avail: NTIS, AGARD Lecture Series 114 Subject Category 08 RTOP 505-43-13)

840. Chambers, Joseph R.; Grafton, Sue B.; and Lutze, Frederick H.: Curve-Flow, Rolling-Flow, and Oscillatory Pure-Yawing Wind-Tunnel Test Methods for Determination of Dynamic Stability Derivatives. Presented at the AGARD Lecture Series on Dynamic Stability Parameters, March 2-5, 1981, Moffett Field, California, and March 16-19, 1981, Rhode St. Genese, Belgium. (Avail: NTIS, AGARD Lecture Series 114 Subject Category 08 RTOP 505-43-13)
841. Chambers, Joseph R.; and Iliff, Kenneth W.: Estimation of Dynamic Stability Parameters From Drop Model Flight Tests. Presented at the AGARD Lecture Series on Dynamic Stability Parameters, March 2-5, 1981, Moffett Field, California, and March 16-19, 1981, Rhode St. Genese, Belgium. (Avail: NTIS, AGARD Lecture Series 114 Subject Category 08 RTOP 505-43-13)
842. Deal, Perry L.; Keyser, Gerald L.; Fisher, Bruce D.; and Crabill, Norman L.: Thunderstorm Hazards Flight Research Program Overview. Presented at the AIAA/SETP/SFTE/SAE 1st Flight Testing Conference, November 11-13, 1981, Las Vegas, Nevada. AIAA Paper No. 81-2412. (Avail: AIAA Subject Category 03 RTOP 505-44-17)
843. Gera, J.; Wilson, R. J.; Enevoldson, E. K.; and Nguyen, L. T.: Flight Test Experience with High Angle-of-Attack Control System Techniques on the F-14 Airplane. Presented at the AIAA/SETP/SFTE/SAE 1st Flight Testing Conference, November 11-13, 1981, Las Vegas, Nevada. AIAA Paper No. 81-2505. (Avail: AIAA Subject Category 08 RTOP 505-43-13)
844. Holmes, Bruce J.: Aerodynamic Design Data for a Cruise-Matched High-Performance Single-Engine Airplane. Presented at the 1981 SAE Business Aircraft Meeting and Exposition, April 7-10, 1981, Wichita, Kansas. SAE Paper No. 810625. (Avail: SAE Subject Category 05 RTOP 530-01-13)
845. Knox, Charles E.: Development of Simplified Airborne Computations for Fuel Conservative Descents in a Time-Based Metered Air Traffic Environment. Presented at the 1981 SAE Business Aircraft Meeting and Exposition, April 7-10, 1981, Wichita, Kansas. SAE Paper No. 810599. (Avail: SAE Subject Category 04 RTOP 534-04-13)
846. Morello, Samuel A.: Integration of Energy Management Concepts Into the Flight Deck. Presented at the 1981 SAE Aerospace Congress and Exposition, October 5-8, 1981, Anaheim, California. Paper No. 811066. (Avail: SAE Subject Category 06 RTOP 534-04-13)
847. Nguyen, Luat T.; Yip, Long P.; and Chambers, Joseph R.: Self-Induced Wing Rock of Slender Delta Wings. Presented at the AIAA 8th Atmospheric Flight Mechanics Conference, August 19-21, 1981, Albuquerque, New Mexico. AIAA Paper No. 81-1883. (Avail: AIAA Subject Category 05 RTOP 505-43-13)
848. Person, Lee H., Jr.; and Steinmetz, George G.: The Integration of Control and Display Concepts for Improved Pilot Situational Awareness. Presented at the Flight Safety Foundation 34th International Air Safety Seminar, November 9-12, 1981, Acapulco, Mexico. (Avail: Flight Safety Foundation Subject Category 06 RTOP 534-04-13)

849. Samms, Kathy H.; and Morello, Samuel A.: Pilot Guidance and Display Considerations for Energy Efficient Flight Profiles. Presented at the AICHE/ASME/IEEE/ISA/AIAA 1981 Joint Automatic Control Conference, June 17-19, 1981, Charlottesville, Virginia.
(Avail: AACC, Vol. I, WA-1C Subject Category 03 RTOP 534-04-13)
850. Van Dam, Cornelis P.: Effect of Wingtip Modifications on Handling Qualities of Agricultural Aircraft. Presented at the 1981 SAE Business Aircraft Meeting and Exposition, April 7-10, 1981, Wichita, Kansas. SAE Paper No. 810606.
(Avail: SAE Subject Category 08 RTOP 505-41-83)

Computer Programs

No computer programs.

Tech Briefs

851. Knox, Charles E. (Langley Research Center); and Cannon, Dennis G. (Boeing Commercial Airplane Company): Flight-Management Algorithm for Fuel-Conservative Descents. NASA Tech Brief LAR-12814. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)

Patents

852. Kelley, Wendell W.: Pitch Altitude Stabilization System Utilizing Engine Pressure Ratio Feedback Signals. U.S. Patent 4,266,743. Issued 1981.
(Avail: U.S. Patent & Trademark Office Subject Category 08)
853. Tisdale, Henry F., Sr.; and Kelley, Wendell W.: Velocity Vector Control System Augmented With Direct Lift Control. (NAS1-14512 Henry F. Tisdale.) U.S. Patent 4,261,537. Issued 1981.
(Avail: U.S. Patent & Trademark Office Subject Category 08)

Oral Presentations to Conferences/Workshops

854. Holmes, Bruce J.; Obera, Clifford J.; Coy, Paul F.; Yip, Long P.; and Brown, Philip W.: Natural Laminar Flow Data From Full Scale Flight and Wind Tunnel Experiments. Presented at the AIAA General Aviation Technologyfest, November 13-14, 1981, Wichita, Kansas.
855. Person, Lee: TCV Experience With Advanced Head Down Displays. Presented at the Air Line Pilots Association Air Safety Workshop, July 22, 1981, Washington, D.C.

PUBLICATIONS FOR HIGH-SPEED AERODYNAMICS DIVISION

Formal Reports

856. Bare, E. Ann; Berrier, Bobby L.; and Capone, Francis J.: Effect of Simulated In-Flight Thrust Reversing on Vertical-Tail Loads of F-18 and F-15 Airplane Models. NASA TP-1890, August 1981, 51 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-23)
857. Barger, Raymond L.: Solution of Complex Nonlinear Problems by a Generalized Application of the Method of Base and Comparison Solutions With Applications to Aerodynamics Problems. NASA TP-1857, May 1981, 26 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-23)
858. Barger, Raymond L.: A Theory for Predicting Boundary Impedance and Resonance Frequencies of Slotted-Wall Wind Tunnels, Including Plenum Effects. NASA TP-1880, July 1981, 20 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-23)
859. Barger, Raymond L.: A Procedure for Designing Forebodies With Constraints on Cross-Section Shape and Axial Area Distribution. NASA TP-1881, July 1981, 12 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-23)
860. Beckwith, Ivan E.; and Holley, Barbara B.: Görtler Vortices and Transition in Wall Boundary Layers of Two Mach 5 Nozzles. NASA TP-1869, September 1981, 70 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-23)
861. Capone, Francis J.: Aeropropulsive Characteristics of Twin Nonaxisymmetric Vectoring Nozzles Installed With Forward-Swept and Aft-Swept Wings. NASA TP-1778, March 1981, 257 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-23)
862. Creel, Theodore R., Jr.; Holley, Barbara B.; and Beckwith, Ivan E.: Effects of a Modified Leading Edge on Noise and Boundary-Layer Transition in a Rod-Wall Sound Shield at Mach 5. NASA TM-81935, May 1981, 37 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-23)
863. Darden, Christine M.: Charts for Determining Potential Minimum Sonic-Boom Overpressures for Supersonic Cruise Aircraft. NASA TP-1820, March 1981, 46 p.
(Avail: NTIS Subject Category 02 RTOP 533-01-43)
864. Guy, Robert W.; Torrence, Marvin G.; Sabol, Alexander P.; and Mueller, James N.: Operating Characteristics of the Langley Mach 7 Scramjet Test Facility. NASA TM-81929, March 1981, 53 p.
(Avail: NTIS Subject Category 09 RTOP 505-32-93)
865. Hasel, Lowell E.; and Stallings, Robert L., Jr.: Analysis of the Performance of the Drive System and Diffuser of the Langley Unitary Plan Wind Tunnel. NASA TM-83168, October 1981, 65 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-23)

866. Hayes, Clyde: Aerodynamic Characteristics of a Supersonic Single-Inlet Missile Configuration Investigated as Part of the Advanced Intercept Air-to-Air Missile (AIAAM) Program. NASA TM-83177, October 1981, 42 p.
(Avail: STIF Subject Category 02 RTOP 505-43-23)
867. Hayes, Clyde: Supersonic Aerodynamic Characteristics of a Twin-Inlet Advanced Intercept Air-to-Air Missile (AIAAM) Configuration. NASA TM-83178, November 1981, 118 p.
(Avail: STIF Subject Category 02 RTOP 505-43-23)
868. Henderson, William P.; and Leavitt, Laurence D.: Stability and Control Characteristics of a Three-Surface Advanced Fighter Configuration at Angles of Attack up to 45°. NASA TM-83171, September 1981, 45 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-23)
869. Jackson, Charlie M., Jr.; Corlett, William A.; and Monta, William J.: Description and Calibration of the Langley Unitary Plan Wind Tunnel. NASA TP-1905, November 1981, 103 p.
(Avail: NTIS Subject Category 02 RTOP 505-42-23)
870. Kaufman, Louis G., II; and Johnson, Charles B.: Methods for Estimating Pressure and Thermal Loads Induced by Elevon Deflections on Hypersonic-Vehicle Surfaces With Turbulent Boundary Layers. NASA TM-83130, September 1981, 40 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-73)
871. Kumar, Ajay: Some Observations on a New Numerical Method for Solving the Navier-Stokes Equations. NASA TP-1934, November 1981, 17 p.
(Avail: NTIS Subject Category 02 RTOP 505-32-93)
872. Kumar, Ajay: Numerical Analysis of the Scramjet-Inlet Flow Field by Using Two-Dimensional Navier-Stokes Equations. NASA TP-1940, December 1981, 28 p.
(Avail: NTIS Subject Category 07 RTOP 505-32-93)
873. Lamb, Milton: Stability and Control Characteristics of a Monoplanar Missile Configuration With Triform-Tail-Fin Arrangements at Mach Numbers From 1.70 to 2.86. NASA TM-83223, December 1981, 117 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-23)
874. Lamb, Milton; Sawyer, Wallace C.; and Thomas, James L.: Experimental and Theoretical Supersonic Lateral-Directional Stability Characteristics of a Simplified Wing-Body Configuration With a Series of Vertical-Tail Arrangements. NASA TP-1878, July 1981, 45 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-23)
875. Miller, David S.; Landrum, Emma Jean; Townsend, James C.; and Mason, William H.: Pressure and Force Data for a Flat Wing and a Warped Conical Wing Having a Shockless Recompression at Mach 1.62. NASA TP-1759, April 1981, 234 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-43)
876. Riebe, Gregory D.; and Pittman, Jimmy L.: Aerodynamic Characteristics of a Hypersonic Cruise Aircraft Concept With Wing-Mounted Propulsion Systems at Mach Numbers of 2.96, 3.96, and 4.63. NASA TM-81937, March 1981, 47 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-73)

877. Riebe, Gregory D.; Small, William J.; and Morris, Odell A.: Aerodynamic Tests and Analysis of a Turbojet-Boosted Launch Vehicle Concept (Spacejet) Over a Mach Number Range of 1.50 to 2.86. NASA TP-1888, July 1981, 53 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-73)
878. Rogers, R. Clayton; and Schexnayder, Charles J., Jr.: Chemical Kinetic Analysis of Hydrogen-Air Ignition and Reaction Times. NASA TP-1856, July 1981, 52 p.
(Avail: NTIS Subject Category 25 RTOP 505-32-93)
879. Stallings, Robert L., Jr.; and Lamb, Milton: Wing-Alone Aerodynamic Characteristics for High Angles of Attack at Supersonic Speeds. NASA TP-1889, July 1981, 188 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-23)
880. Talcott, Noel A., Jr.: The Use of Interactive Graphic Displays for Interpretation of Surface Design Parameters. NASA TM-81963, May 1981, 24 p.
(Avail: NTIS Subject Category 05 RTOP 505-31-73)
881. Townsend, James C.: Use of Interactive Graphics To Analyze QUICK-Geometry. NASA TM-83234, December 1981, 48 p.
(Avail: IAC Subject Category 61 RTOP 505-31-43)

Quick-Release Technical Memorandums

882. Adams, Mary S.: Interactive Input for the QUICK Geometry System - User's Manual. NASA TM-81933, February 1981, 65 p.
(Avail: IAC Subject Category 02 RTOP 505-31-43)
883. Beckwith, I. E.: Comments on Settling Chamber Design for Quiet, Blowdown Wind Tunnels. NASA TM-81948, March 1981, 39 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-23)
884. Corlett, William A.: Aerodynamic Characteristics of a Missile Model With a Bulbous Nose, Cruciform Wings and Inline Aft Tail Controls at Mach Numbers From 1.70 to 4.63. NASA TM-81921, February 1981, 73 p.
(Avail: STIF Subject Category 02 RTOP 505-43-33)
885. Corlett, William A.: Aerodynamic Characteristics of a Missile Model With Inline Cruciform Wings, Fixed Canards, and Aft Tail Controls at Mach Numbers From 0.50 to 4.63. NASA TM-81925, February 1981, 105 p.
(Avail: STIF Subject Category 02 RTOP 505-43-33)
886. Corlett, William A.: Aerodynamic Characteristics and Tail Hinge Moments of a Missile Model With Inline Cruciform Wings, Fixed Canards, and Aft Tail Controls at Mach Numbers From 1.65 to 4.63. NASA TM-81938, February 1981, 73 p.
(Avail: STIF Subject Category 02 RTOP 505-43-33)
887. Corlett, William A.: Aerodynamic Characteristics of a Cruciform Missile Model With Inline Wings, Fixed Canards, Aft Tail Controls, and Various Protuberances at Mach Numbers From 2.30 to 4.63. NASA TM-81939, February 1981, 43 p.
(Avail: STIF Subject Category 02 RTOP 505-43-33)

Contractor Reports

888. Baker, A. A.; and Morris, R. E.: Propulsion Integration Study of a Turbofan Ramjet Powered Aircraft. (NAS1-15057 Lockheed-California Company.) NASA CR-165678, June 1981, 126 p.
(Avail: STIF Subject Category 07 RTOP 505-31-73)
889. Balasubramanian, R.; and Orszag, S. A.: Numerical Studies of Laminar and Turbulent Drag Reduction. (NAS1-16237 Cambridge Hydrodynamics, Inc.) NASA CR-3498, December 1981, 31 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-23)
890. Biringen, Sedat; and McMillan, Oden J.: Calculation of Two-Dimensional Inlet Flow Fields by an Implicit Method Including Viscous Effects - User's Manual. (NAS1-15951 Nielsen Engineering and Research, Inc.) NASA CR-3412, May 1981, 23 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-23)
891. Biringen, Sedat; and McMillan, O. J.: An Implicit Method for the Calculation of Inlet Flow Fields. (NAS1-15951 Nielsen Engineering and Research, Inc.) NASA CR-3413, June 1981, 46 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-23)
892. Biringen, Sedat; and McMillan, Oden J.: Calculation of Two-Dimensional Inlet Flow Fields by an Implicit Method Including Viscous Effects - Program Documentation and Test Case. (NAS1-15951 Nielsen Engineering and Research, Inc.) NASA CR-3414, June 1981, 169 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-23)
893. Carmichael, B. H.: Low Reynolds Number Airfoil Survey - Volume I. (L-4059B Low Energy Transportation Systems.) NASA CR-165803, November 1981, 106 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-23)
894. Corke, T. C.; Guezennec, Y.; and Nagib, H. M.: Modification in Drag of Turbulent Boundary Layers Resulting From Manipulation of Large-Scale Structures. (NSG-1591 Illinois Institute of Technology.) NASA CR-3444, July 1981, 26 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-23)
895. Fabris, G.; Harsha, P. T.; and Edelman, R. B.: Multiple-Scale Turbulence Modeling of Boundary Layer Flows for Scramjet Applications. (NAS1-15988 Science Applications, Inc.) NASA CR-3433, May 1981, 72 p.
(Avail: NTIS Subject Category 34 RTOP 505-32-93)
896. Hall, Jon F.: Pan Air Geometry Management System (PAGMS) - A Data-Base Management System for Pan Air Type Geometry Data. (NAS1-16000 Kentron International, Inc.) NASA CR-165811, November 1981, 32 p.
(Avail: STIF Subject Category 02 RTOP 505-43-23)
897. Huynh, Quyen Q.: Weighted-Mean Scheme for Solving Incompressible Viscous Flow. (NAS1-15604 Systems and Applied Sciences Corporation.) NASA CR-165747, May 1981, 27 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-13)

898. Malik, Mujeeb R.: Instability and Transition in Rotating Disk Flow.
(NAS1-15604 Systems and Applied Sciences Corporation.) NASA CR-165689,
March 1981, 29 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-13)
899. Oman, R. A.; Leng, J.; Maciulaitis A.; Zeiders, G. W.; and Wetzstein, H.:
Systems and Mission-Related Factors for the Advanced Flow Laser. (NAS1-15670
Grumman Aerospace Corporation.) NASA CR-3443, August 1981, 79 p.
(Avail: STIF Subject Category 36 RTOP 530-03-13)
900. Orszag, Steven A.: Advanced Stability Analyses for Laminar Flow Control.
(NAS1-15894 Cambridge Hydrodynamics, Inc.) NASA CR-165661, February 1981,
125 p.
(Avail: NTIS Subject Category 34 RTOP 514-55-03)
901. Orszag, Steven A.: Studies of Compressible Shear Flows and Turbulent Drag
Reduction. (NAS1-15844 Cambridge Hydrodynamics, Inc.) NASA CR-165690, April
1981, 62 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-23)
902. Piatt, Michael J.: An Experimental Investigation of a Large ΔP Settling
Chamber for a Supersonic Pilot Quiet Tunnel. (NAS1-16096 Systems and Applied
Sciences Corporation.) NASA CR-3436, June 1981, 79 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-23)
903. Reichert, R. T.: Homing Performance Comparison of Selected Airframe
Configurations Using Skid-to-Turn and Bank-to-Turn Steering Policies.
(L-75242A The Johns Hopkins University.) NASA CR-3420, May 1981, 168 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-23)
904. Sanlorenzo, E. A.; Venkataraman, S. K.; and Deere, M. J.: Design, Fabrication
and Tests of Scramjet Model at $M = 4$. (NAS1-14857 General Applied Science
Laboratories, Inc.) NASA CR-165787, 1981.
(Avail: STIF Subject Category 07 RTOP 505-32-93)
905. Staff of Rockwell International Corporation: Aerodynamic Prediction Techniques
for Hypersonic Configuration Design. (NAS1-15820 Rockwell International
Corporation.) NASA CR-165651, March 1981, 91 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-73)
906. Woodward, F. A.: Development of the Triplet Singularity for the Analysis of
Wings and Bodies in Supersonic Flow. (NAS1-15792 Analytical Methods, Inc.)
NASA CR-3466, September 1981, 71 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-23)

Journal Articles and Periodical Literature

907. Blair, A. B., Jr.: Remote Control Canard Missile With a Free-Rolling Tail Brake
Torque System. Journal of Spacecraft and Rockets, Volume 18, Number 6,
November/December 1981, p. 550-555.
(Avail: AIAA Subject Category 02 RTOP 505-43-23)

908. Bushnell, Dennis M.: Introduction to Chapter VII: Compliant Surfaces. Viscous Flow Drag Reduction, edited by Gary R. Hough, Volume 72 of Progress in Astronautics and Aeronautics, 1980 (Released 1981), p. 387-390.
(Avail: AIAA Subject Category 34 RTOP 505-31-23)
909. Cary, Aubrey M., Jr.; Weinstein, Leonard M.; and Bushnell, Dennis M.: Drag Reduction Characteristics of Small Amplitude Rigid Surface Waves. AIAA Progress in Astronautics and Aeronautics, Volume 72, 1980 (Released March 1981), p. 144-167.
(Avail: AIAA Subject Category 34 RTOP 505-31-23)
910. Dillon, James L.; Marcum, Don C., Jr.; Johnston, Patrick J.; and Hunt, James L.: Aerodynamic and Inlet Flow Characteristics of Several Hypersonic Airbreathing Missile Concepts. Journal of Aircraft, Volume 18, Number 4, April 1981, p. 231-238.
(Avail: AIAA Subject Category 02 RTOP 505-31-73)
911. Hefner, Jerry N.; Weinstein, Leonard M.; and Bushnell, Dennis M.: A Large-Eddy Breakup Scheme for Turbulent Viscous Drag Reduction. AIAA Progress in Astronautics and Aeronautics, Volume 72, 1980 (Released March 1981), p. 110-127.
(Avail: AIAA Subject Category 34 RTOP 505-31-23)
912. Landrum, Emma Jean; and Miller, David S.: Assessment of Analytic Methods for the Prediction of Supersonic Flow Over Bodies. AIAA Journal, Volume 19, Number 2, February 1981, p. 160-164.
(Avail: AIAA Subject Category 02 RTOP 505-11-13)
913. Morrisette, E. L.; and Bushnell, D. M.: Evidence of Imbedded Vortices in a Three-Dimensional Shear Flow. AIAA Journal, Volume 19, Number 3, March 1981, p. 400-402.
(Avail: AIAA Subject Category 34 RTOP 505-31-23)
914. Quass, B.; Howard, F.; Weinstein, L.; and Bushnell, D.: On Longitudinal Grooves for Bluff Body Drag Reduction. AIAA Journal, Volume 19, Number 4, April 1981, p. 535-537.
(Avail: AIAA Subject Category 34 RTOP 505-31-23)
915. Rudy, David H.; and Strikwerda, John C.: Boundary Conditions for Subsonic Compressible Navier-Stokes Calculations. Journal of Computers and Fluids, Volume 9, 1981, p. 327-338.
(Avail: Pergamon Press Ltd. Subject Category 34 RTOP 505-06-13)
916. Small, W. J.; Riebe, G. D.; and Taylor, A. H.: Aerodynamics of a Turbojet-Boosted Launch Vehicle Concept. Journal of Spacecraft and Rockets, Volume 18, Number 1, January 1981, p. 36-43.
(Avail: AIAA Subject Category 02 RTOP 505-31-73)
917. Taylor, Allan H.; and Jackson, L. Robert: Structural Concepts for a Mach 5 Cruise Airplane LH₂ Fuselage Tank. Journal of Aircraft, Volume 18, Number 8, August 1981, p. 655-662.
(Avail: AIAA Subject Category 39 RTOP 505-31-73)

918. Walsh, Michael J.: Drag Characteristics of V-Groove and Transverse Curvature Riblets. AIAA Progress in Astronautics and Aeronautics, Volume 72, 1980 (Released March 1981), p. 168-184.
(Avail: AIAA Subject Category 34 RTOP 505-31-23)
919. Wilkinson, W.; Weinstein, L.; and Ash, R.: Hybrid Suction Surface for Turbulent Boundary Layer Flow. AIAA Progress in Astronautics and Aeronautics, Volume 72, 1980 (Released March 1981), p. 233-248.
(Avail: AIAA Subject Category 34 RTOP 505-31-23)

Meeting/Conference Papers

920. Allen, Jerry M.; and Blair, A. B., Jr.: Comparison of Analytical and Experimental Supersonic Aerodynamic Characteristics of a Forward-Control Missile. Presented at the AIAA 19th Aerospace Sciences Meeting, January 12-15, 1981, St. Louis, Missouri. AIAA Paper No. 81-0398.
(Avail: AIAA Subject Category 02 RTOP 505-43-23)
921. Andrews, Earl H.; Northam, G. Burton; Torrence, Marvin G.; and Trexler, Carl A.: Mach 4.0 Tests of a Hydrogen-Burning Airframe-Integrated Scramjet. Presented at the 18th JANNAF Combustion Meeting, October 19-23, 1981, Pasadena, California.
(Avail: JHU/APL Subject Category 07 RTOP 505-32-93)
922. Blair, A. B., Jr.: Remote Control Canard Missile With a Free-Rolling Tail Brake Torque System. Presented at the AIAA 19th Aerospace Sciences Meeting, January 12-15, 1981, St. Louis, Missouri. AIAA Paper No. 81-0146.
(Avail: AIAA Subject Category 02 RTOP 505-43-23)
923. Bushnell, D. M.: Simple Compressible Strains. Presented at 1980-81 AFOSR-HTTM-Stanford Conference on Complex Turbulent Flows--Comparison of Computational and Experiment, Stanford University, Stanford, California, Sept. 14-18, 1981.
(Avail: Stanford University, Proceedings (Pending) Subject Category 34 RTOP 505-31-23)
924. Capone, Francis J.; Hunt, B. L.; and Poth, G. E.: Subsonic/Supersonic Nonvectorized Aeropropulsive Characteristics of Nonaxisymmetric Nozzles Installed on an F-18 Model. Presented at the AIAA/SAE/ASME 17th Joint Propulsion Conference, July 27-29, 1981, Colorado Springs, Colorado. AIAA Paper No. 81-1445.
(Avail: AIAA Subject Category 02 RTOP 505-43-23)
925. Capone, Francis J.; Re, Richard J.; and Bare, E. Ann: Thrust Reversing Effects on Twin-Engine Aircraft Having Nonaxisymmetric Nozzles. Presented at the AIAA/NASA V/STOL Conference, December 7-9, 1981, Palo Alto, California. AIAA Paper No. 81-2639.
(Avail: AIAA Subject Category 02 RTOP 505-43-23)
926. Carlson, Charles H.; and Hunt, James L.: A Design of a Dual-Mode Scramjet for Surface-to-Air Missiles (HYSAM). Presented at the 1981 JANNAF Propulsion Meeting, May 28, 1981, New Orleans, Louisiana. Published in CPIA Publication Number 340, Volume 7, p. 285-308.
(Avail: NTIS Subject Category 07 RTOP 530-03-13)

927. Carlson, Harry W.; and Miller, David S.: The Influence of Leading-Edge Thrust on Twisted and Cambered Wing Design for Supersonic Cruise. Presented at the AIAA Aircraft Systems and Technology Meeting, August 11-13, 1981, Dayton, Ohio. AIAA Paper No. 81-1656.
(Avail: AIAA Subject Category 02 RTOP 505-31-43)
928. Cline, M. C.; and Wilmoth, R. G.: Computation of High Reynolds Number Internal/External Flows. Presented at the AIAA 14th Fluid and Plasma Dynamics Conference, June 23-25, 1981, Palo Alto, California. AIAA Paper No. 81-1191.
(Avail: AIAA Subject Category 34 RTOP 505-04-13)
929. Drummond, J. Philip; and Weidner, Elizabeth H.: Numerical Study of a Scramjet Engine Flow Field. Presented at the AIAA 19th Aerospace Sciences Meeting, January 12-15, 1981, St. Louis, Missouri. AIAA Paper No. 81-0186.
(Avail: AIAA Subject Category 34 RTOP 505-32-93)
930. Hayes, Clyde: Aerodynamic Characteristics of a Series of Airbreathing Missile Configurations. Presented at the 12th Navy Symposium on Aeroballistics, May 12-14, 1981, Carderock, Maryland.
(Avail: David Taylor Model Basin, Proceedings Subject Category 02 RTOP 505-43-23)
931. Howard, F.; Quass, B.; Weinstein, L.; and Bushnell, D.: Longitudinal Afterbody Grooves and Shoulder Radius for Low-Speed Bluff Body Drag Reduction. Presented at the ASME Winter Annual Meeting, November 15-20, 1981, Washington, D.C.
(Avail: ASME Subject Category 34 RTOP 505-31-23)
932. Hunt, B. L.; and Capone, F. J.: Subsonic/Supersonic Aeropropulsive Characteristics of Nonaxisymmetric Nozzles Installed on an F-18 Model. Presented at AIAA/SAE/ASME 17th Joint Propulsion Conference, Colorado Springs, Colorado, July 27-29, 1981. AIAA Paper No. 81-1445.
(Avail: AIAA Subject Category 02 RTOP 505-43-23)
933. Kumar, A.: Numerical Analysis of the Scramjet Inlet Flow Field Using Two-Dimensional Navier-Stokes Equations. Presented at AIAA 19th Aerospace Sciences Meeting, January 12-15, 1981, St. Louis, Missouri. AIAA Paper No. 81-0185.
(Avail: AIAA Subject Category 34 RTOP 505-32-93)
934. Lamb, Milton; Sawyer, Wallace C.; and Thomas, James L.: Theoretical and Experimental Supersonic Lateral-Directional Stability Characteristics. Presented at the 12th Navy Symposium on Aeroballistics, May 12-14, 1981, Carderock, Maryland.
(Avail: David Taylor Model Basin, Proceedings Subject Category 02 RTOP 505-43-23)
935. Northam, G. Burton; Trexler, Carl A.; McClinton, Charles R.; and Anderson, Griffin Y.: Dual-Mode Combustion With Swept-Strut H_2 -Fuel Injector for Scramjet Application. Presented at the 18th JANNAF Combustion Meeting, October 19-23, 1981, Pasadena, California.
(Avail: JHU/APL Subject Category 07 RTOP 505-32-93)

936. Putnam, Lawrence E.; and Mace, James: A Survey of Aft Body Flow Prediction Methods. Presented at the AIAA Aircraft Systems and Technology Meeting, August 11-13, 1981, Dayton, Ohio. AIAA Paper No. 81-1694.
(Avail: AIAA Subject Category 02 RTOP 505-32-13)
937. Sawyer, W. C.; Monta, W. J.; Carter, W. V.; and Alexander, W. K.: Control Characteristics for Wrap-Around Fins on Cruise Missile Configurations. Presented at the AIAA 19th Aerospace Sciences Meeting, January 12-15, 1981, St. Louis, Missouri. AIAA Paper No. 81-0009.
(Avail: AIAA Subject Category 02 RTOP 505-43-23)
938. Stack, Sharon H.: A Computer-Aided Design System Geared Toward Conceptual Design in a Research Environment. Presented at the AIAA 19th Aerospace Sciences Meeting, January 12-15, 1981, St. Louis, Missouri. AIAA Paper No. 81-0372.
(Avail: AIAA Subject Category 05 RTOP 505-31-73)
939. Stallings, R. L.; and Lamb, M.: Wing-Alone Aerodynamic Characteristics at High Angles of Attack. Presented at the AIAA 19th Aerospace Sciences Meeting, January 12-15, 1981, St. Louis, Missouri. AIAA Paper No. 81-0008.
(Avail: AIAA Subject Category 02 RTOP 505-43-23)
940. Swanson, R. C.: Navier-Stokes Solutions for Nonaxisymmetric Nozzle Flows. Presented at the AIAA 14th Fluid and Plasma Dynamics Conference, June 23-25, 1981, Palo Alto, California. AIAA Paper No. 81-1217.
(Avail: AIAA Subject Category 34 RTOP 505-32-13)
941. Talcott, Noel A., Jr.: A Computer Graphics Display Technique for the Examination of Aircraft Design Data. Presented at the AIAA 19th Aerospace Sciences Meeting, January 12-15, 1981, St. Louis, Missouri. AIAA Paper No. 81-0370.
(Avail: AIAA Subject Category 05 RTOP 505-31-73)
942. Weidner, Elizabeth H.; and Drummond, J. Philip: A Parametric Study of Staged Fuel Injector Configurations for Scramjet Applications. Presented at the AIAA/SAE/ASME 17th Joint Propulsion Conference, July 27-29, 1981, Colorado Springs, Colorado. AIAA Paper No. 81-1468.
(Avail: AIAA Subject Category 07 RTOP 505-32-93)
943. Weinstein, Leonard M.: Effect of Driven-Wall Motion on a Turbulent Boundary Layer. Presented at the International Union of Theoretical and Applied Mechanics (IUTAM) Symposium on "Unsteady Turbulent Shear Flows," May 5-8, 1981, Toulouse, France.
(Avail: ONERA/CERT, Proceedings Subject Category 34 RTOP 505-31-23)

Computer Programs

No computer programs.

Tech Briefs

944. Middleton, W. D.; Lundry, J. L.; and Coleman, R. G. (Boeing Company):
Aerodynamics of Supersonic Aircraft. NASA Tech Brief LAR-12857. Released
1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)

Patents

No patents.

Oral Presentations to Conferences/Workshops

945. Adams, Mary S.: The Use of Refresh Graphics to Modify a Numerical Model.
Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and
Fabrication, February 9-12, 1981, Hampton, Virginia.
946. Ames, Kathy R.: Computer Code for Generating Fuselage Cross Sections in Wave-
Drag Format. Presented at the Workshop on Computer-Aided Modeling, Analysis,
Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
947. Anderson, Griffin Y.: Evaluation of an Airframe-Integrated Modular Scramjet
Concept. Presented at the AIAA/SAE/ASME 17th Joint Propulsion Conference,
July 27-29, 1981, Colorado Springs, Colorado.
948. Beach, H. Lee, Jr.; Mackley, E. A.; and Guy, R. W.: Mach 7 Tests of the Langley
Airframe-Integrated Scramjet Concept. Presented at the AIAA/SAE/ASME 17th
Joint Propulsion Conference, July 27-29, 1981, Colorado Springs, Colorado.
949. Carlson, C. W.; and Hunt, J. L.: Comparison of Ramjet and Scramjet Airframe-
Integrated Propulsion Systems for Hypersonic Airbreathing Missiles. Presented
at the AIAA/SAE/ASME 17th Joint Propulsion Conference, July 27-29, 1981,
Colorado Springs, Colorado.
950. Darden, Christine M.: Effects of Limiting the Leading-Edge Loading on
Supersonic Wing Aerodynamics. Presented at Supersonic Cruise Research (SCR)
Technology Studies Review, April 1-2, 1981, Hampton, Virginia.
951. Harris, Roy V., Jr.: An Engineer's View of China and Its People. Presented at
the Virginia Engineering Technical Societies Annual Meeting, May 29-31, 1981,
Virginia Beach, Virginia.
952. Hasel, Lowell E.: Ground Test Facilities for Aerodynamic Testing. Presented at
University of Tennessee Space Institute, Aerospace Ground Test Facilities and
Flight Testing Short Course, April 28, 1981, Tullahoma, Tennessee.
953. Johnston, P. J.; Hom, K. W.; Cubbage, J. M.; and Hunt, J. L.: Scramjet
Integration on a Hypersonic Airbreathing Missile Concept (HYSAM). Presented
at the AIAA/SAE/ASME 17th Joint Propulsion Conference, July 27-29, 1981,
Colorado Springs, Colorado.

954. Kraemer, G. O.; Rogers, R. C.; and Tiwari, S. N.: Two-Dimensional Transverse Injection Into a Supersonic Mainstream. Presented at the 1981 Annual Meeting of the Virginia Academy of Science, May 12-15, 1981, Norfolk, Virginia.
955. Kumar, A.: Some Observations on MacCormack's New Explicit-Implicit Method. Presented at the ICASE Computational Fluid Dynamics Workshop, September 2-11, 1981, Hampton, Virginia.
956. Mack, Robert J.: Status of Supersonic Wing Leading-Edge Suction Study. Presented at Supersonic Cruise Research (SCR) Technology Studies Review, April 1-2, 1981, Hampton, Virginia.
957. Mack, Robert J.: Theoretical Results of a Sonic Boom Configured Vehicle. Presented at Supersonic Cruise Research (SCR) Technology Studies Review, April 1-2, 1981, Hampton, Virginia.
958. Northam, G. Burton: High-Speed Propulsion Research at NASA Langley Research Center. Presented at the AFOSR Contractors Meeting on Airbreathing Combustion Research, November 16-20, 1981, Clearwater, Florida.
959. Rudy, D. H.: Progress on Development of Code to Compute Subsonic Unsteady Compressible Flows. Presented at Workshop on Base Flow Research Review, University of Illinois, Champaign, Illinois, August 31-September 3, 1981.
960. Shrout, Barrett: Wind Tunnel Model Construction for the Supersonic Aerodynamics Branch at Langley. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
961. Stack, Sharon: A Computer-Aided Design System Geared Toward Conceptual Design in a Research Environment. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
962. Stack, Sharon: Overview of Session IV: CAD-CAM - The Design and Machining of Physical Models. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
963. Talcott, Noel: Interactive Graphics Display Technique for the Examination of Aerodynamic Surface Data. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
964. Talcott, Noel A., Jr.: Computer-Aided Modeling, Analysis, Design and Fabrication. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
965. Townsend, J. C.: Interactive Graphics to Aid the QUICK User. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
966. Wood, Richard M.: Study of Methods for Predicting Supersonic Aerodynamics of Twin-Body Configurations. Presented at Supersonic Cruise Research (SCR) Technology Studies Review, April 1-2, 1981, Hampton, Virginia.

PUBLICATIONS FOR TRANSONIC AERODYNAMICS DIVISION

Formal Reports

967. Barnwell, Richard W.: A Potential-Flow/Boundary-Layer Method for Calculating Subsonic and Transonic Airfoil Flow With Trailing-Edge Separation. NASA TM-81850, June 1981, 37 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-33)
968. *Bingham, Gene J.; *Noonan, Kevin W.; and Sewall, William G.: Two-Dimensional Aerodynamic Characteristics of an Airfoil Designed for Rotorcraft Application. NASA TP-1965, AVRADCOM TR 81-B-6, December 1981, 177 p.
(Avail: IAC Subject Category 02 RTOP 023-10-01)
969. Campbell, Richard L.: Computer Analysis of Flow Perturbations Generated by Placement of Choke Bumps in a Wind Tunnel. NASA TP-1892, August 1981, 42 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-23)
970. Carson, George T., Jr.; and Lee, Edwin E., Jr.: Experimental and Analytical Investigation of Axisymmetric Supersonic Cruise Nozzle Geometry at Mach Numbers From 0.60 to 1.30. NASA TP-1953, December 1981, 87 p.
(Avail: NTIS Subject Category 02 RTOP 505-32-13)
971. Dagenhart, J. Ray: Amplified Crossflow Disturbances in the Laminar Boundary Layer on Swept Wings With Suction. NASA TP-1902, November 1981, 88 p.
(Avail: NTIS Subject Category 34 RTOP 505-01-13)
972. Davidson, Robert E.: Optimization and Performance Calculation of Dual-Rotation Propellers. NASA TP-1948, December 1981, 46 p.
(Avail: NTIS Subject Category 01 RTOP 505-31-33)
973. Dwoyer, Douglas L.; and Thames, Frank C.: Temporal and Spatial Inconsistencies of Time-Split Finite-Difference Schemes. NASA TP-1790, April 1981, 56 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-33)
974. Fuller, Dennis E.: Guide for Users of the National Transonic Facility. NASA TM-83124, July 1981, 39 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-63)
975. Gentry, Garl L., Jr.; Igoe, William B.; and Fuller, Dennis E.: Description of 0.186-Scale Model of High-Speed Duct of National Transonic Facility. NASA TM-81949, May 1981, 45 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-63)
976. Gloss, Blair B.; and Nystrom, Donna: Estimation of Fan Pressure Ratio Requirements and Operating Performance for the National Transonic Facility. NASA TM-81802, May 1981, 31 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-63)

*Army Structures Laboratory, USARTL (AVRADCOM)

977. Hall, Robert M.; and Adcock, Jerry B.: Simulation of Ideal-Gas Flow by Nitrogen and Other Selected Gases at Cryogenic Temperatures. NASA TP-1901, September 1981, 49 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-53)
978. Lamar, John E.; and Frink, Neal T.: Experimental and Analytical Study of the Longitudinal Aerodynamic Characteristics of Analytically and Empirically Designed Strake-Wing Configurations at Subcritical Speeds. NASA TP-1803, June 1981, 223 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-43)
979. McGhee, Robert J.; and Beasley, William D.: Wind-Tunnel Results for a Modified 17-Percent-Thick Low-Speed Airfoil Section. NASA TP-1919, November 1981, 85 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-33)
980. McKinney, L. Wayne; and Baals, Donald D. (editors): High Reynolds Number Research - 1980. NASA CP-2183, September 1981, 325 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-63)
981. McKinney, Marion O.; and Scheiman, James: Evaluation of Turbulence Reduction Devices for the Langley 8-Foot Transonic Pressure Tunnel. NASA TM-81792, June 1981, 30 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-43)
982. Morgan, Harry L., Jr.: Low-Speed Aerodynamic Performance of an Aspect-Ratio-10 Supercritical-Wing Transport Model Equipped With a Full-Span Slat and Part-Span and Full-Span Double-Slotted Flaps. NASA TP-1805, April 1981, 180 p.
(Avail: IAC Subject Category 02 RTOP 534-02-13)
983. *Noonan, Kevin W.: Experimental Investigation of a 10-Percent-Thick Helicopter Rotor Airfoil Section Designed With a Viscous Transonic Analysis Code. NASA TP-1864, AVRADCOM TR 81-B-3, July 1981, 76 p.
(Avail: IAC Subject Category 02 RTOP 505-31-33)
984. Scheiman, James: Considerations for the Installation of Honeycomb and Screens To Reduce Wind-Tunnel Turbulence. NASA TM-81868, August 1981, 51 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-43)
985. Scheiman, James: Comparison of Experimental and Theoretical Turbulence Reduction Characteristics for Screens, Honeycomb, and Honeycomb-Screen Combinations. NASA TP-1958, December 1981, 53 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-33)
986. Sewall, William G.: Description of Recent Changes in the Langley 6- by 28-Inch Transonic Tunnel. NASA TM-81947, May 1981, 42 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-33)
987. Somers, Dan M.: Design and Experimental Results for a Natural-Laminar-Flow Airfoil for General Aviation Applications. NASA TP-1861, June 1981, 101 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-33)

988. Somers, Dan M.: Design and Experimental Results for a Flapped Natural-Laminar-Flow Airfoil for General Aviation Applications. NASA TP-1865, June 1981, 122 p.
(Avail: IAC Subject Category 02 RTOP 505-31-33)
989. Streett, Craig L.: Viscous-Inviscid Interaction Method Including Wake Effects for Three-Dimensional Wing-Body Configurations. NASA TP-1910, September 1981, 28 p.
(Avail: IAC Subject Category 02 RTOP 505-31-13)
990. Tuttle, Marie H.; and Gloss, Blair B.: Support Interference of Wind Tunnel Models - A Selective Annotated Bibliography. NASA TM-81909, March 1981, 33 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-53)

Quick-Release Technical Memorandums

991. Boyden, Richmond P.; and Johnson, William G., Jr.: Preliminary Results of Buffet Tests in a Cryogenic Wind Tunnel. NASA TM-81923, July 1981, 37 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-53)
992. Dwoyer, Douglas L.; Newman, Perry A.; Thames, Frank C.; and Melson, N. Duane: A Tile-Gap Flow Model for Use in Aerodynamic Loads Assessment of Space Shuttle Thermal Protection System: Parallel Gap Faces. NASA TM-83151, October 1981, 77 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-13)
993. Harris, Charles D.: Two-Dimensional Aerodynamic Characteristics of the NACA 0012 Airfoil in the Langley 8-Foot Transonic Pressure Tunnel. NASA TM-81927, April 1981, 137 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-33)
994. Peddrew, Kathryn H. (compiler): A User's Guide to the Langley 16-Foot Transonic Tunnel. NASA TM-83186, August 1981, 196 p.
(Avail: NTIS Subject Category 09 RTOP 505-32-13)
995. Polhamus, Edward C.; and Toll, Thomas A.: Research Related to Variable Sweep Aircraft Development. NASA TM-83121, May 1981, 40 p.
(Avail: NTIS Subject Category 05 RTOP 505-43-33)

Contractor Reports

996. Ahmadi, Ali Reza: An Asymptotic Unsteady Lifting-Line Theory With Energetics and Optimum Motion of Thrust-Producing Lifting Surfaces. (NGR 22-009-818 Massachusetts Institute of Technology.) NASA CR-165679, April 1981, 344 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-43)
997. Barna, P. Stephen: Experimental Investigation on the V/STOL Tunnel at NASA/Langley Research Center. (L-12343B P. Stephen Barna, consultant.) NASA CR-165655, February 1981, 76 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-43)

998. Britcher, C. P.: Electromagnet Configurations for Extreme Attitude Testing in Magnetic Suspension and Balance Systems. (NSG-7523 The University of Southampton.) NASA CR-163862, May 1981, 20 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-53)
999. El-Hady, Nabil M.: HADY-I, a FORTRAN Program for the Compressible Stability Analysis of Three-Dimensional Boundary Layers. (NSG-1645 Old Dominion University.) NASA CR-3467, September 1981, 117 p.
(Avail: NTIS Subject Category 34 RTOP 534-01-13)
1000. El-Hady, Nabil M.: On the Effect of Boundary Layer Growth on the Stability of Compressible Flows. (NSG-1645 Old Dominion University.) NASA CR-3474, October 1981, 45 p.
(Avail: NTIS Subject Category 34 RTOP 534-01-13)
1001. Faery, H. F., Jr.; Strozier, J. K.; and Ham, J. A.: Experimental and Theoretical Study of Three Interacting, Closely-Spaced, Sharp-Edged 60° Delta Wings at Low Speeds. (United States Military Academy.) NASA CR-3460, October 1981, 45 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-43)
1002. Fortescue, P. W.; and Bouchalis, C.: Digital Controllers for the Vertical Channels of a Magnetic Suspension System. (NSG-7523 The University of Southampton.) NASA CR-165684, May 1981, 33 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-53)
1003. Haldeman, C. W.; Kraemer, R. A.; Prey, S. W.; Alishahi, M. M.; and Covert, E. E.: Application of Superconducting Coils to the NASA Prototype Magnetic Balance. (NSG-1356 Massachusetts Institute of Technology.) NASA CR-165660, January 1981, 142 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-53)
1004. Kuhlman, John M.; and Ku, Tzuchun Jeffrey: Numerical Optimization Techniques for Bound Circulation Distribution for Minimum Induced Drag of Nonplanar Wings: Computer Program Documentation. (NSG-1357 Old Dominion University.) NASA CR-3458, August 1981, 77 p.
(Avail: IAC Subject Category 02 RTOP 505-31-43)
1005. Kuhlman, John M.; and Shu, Jin-Yea: Computer Program Documentation for a Subcritical Wing Design Code Using Higher Order Far-Field Drag Minimization. (NSG-1357 Old Dominion University.) NASA CR-3457, September 1981, 176 p.
(Avail: IAC Subject Category 02 RTOP 505-31-43)
1006. Lan, C. Edward; and Chang, Jen-Fu: Calculation of Vortex Lift Effect for Cambered Wings by the Suction Analogy. (NSG-1629 The University of Kansas Center for Research, Inc.) NASA CR-3449, July 1981, 84 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-43)
1007. Lan, C. Edward; and Chang, Jen-Fu: VORCAM - A Computer Program for Calculating Vortex Lift Effect of Cambered Wings by the Suction Analogy. (NSG-1629 The University of Kansas Center for Research, Inc.) NASA CR-165800, November 1981, 123 p.
(Avail: IAC Subject Category 02 RTOP 505-31-43)

1008. Manro, Marjorie E.: Transonic Pressure Measurements and Comparison of Theory to Experiment for Three Arrow-Wing Configurations - Volume I: Experimental Data Report - Basic Data and Effect of Wing Shape. (NAS1-14962 Boeing Commercial Airplane Company.) NASA CR-165701, November 1981, 713 p.
(Avail: STIF Subject Category 02 RTOP 743-01-12)
1009. Manro, Marjorie E.: Transonic Pressure Measurements and Comparison of Theory to Experiment for Three Arrow-Wing Configurations - Volume II: Experimental Data Report - Effect of Trailing-Edge Control Surface Deflection and a Wing Fin. (NAS1-14962 Boeing Commercial Airplane Company.) NASA CR-165702, November 1981, 621 p.
(Avail: STIF Subject Category 02 RTOP 743-01-12)
1010. Manro, Marjorie E.: Transonic Pressure Measurements and Comparison of Theory to Experiment for Three Arrow-Wing Configurations - Volume III: Data Report - Comparison of Attached-Flow Theories to Experiment. (NAS1-14962 Boeing Commercial Airplane Company.) NASA CR-165703, November 1981, 508 p.
(Avail: STIF Subject Category 02 RTOP 743-01-12)
1011. Pierce, G. Alvin; and Vaidyanathan, Anand R.: Helicopter Rotor Load Prediction Using a Matched Asymptotic Expansion Technique. (NAS1-16222 Georgia Institute of Technology.) NASA CR-165742, 1981.
(Avail: NTIS (Pending) Subject Category 02 RTOP 505-42-23)
1012. Rao, Dhanvada M.; and Johnson, Thomas D., Jr.: Subsonic Pitch-Up Alleviation on a 74 Deg. Delta Wing. (NAS1-16259 Vigyan Research Associates, Inc.) NASA CR-165749, July 1981, 19 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-43)
1013. Rao, Dhanvada M.; and Tingas, Stephen A.: Subsonic Balance and Pressure Investigation of a 60-Deg. Delta Wing With Leading-Edge Devices (Data Report). (NAS1-16259 Vigyan Research Associates, Inc.) NASA CR-165806, November 1981, 125 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-43)
1014. Reddy, C. Subba: Investigation of Aerodynamic Characteristics of Wings Having Vortex Flow Using Different Numerical Codes. (NSG-1561 Old Dominion University Research Foundation.) NASA CR-165706, April 1981, 57 p.
(Avail: NTIS Subject Category 02 RTOP 505-06-53)
1015. Steger, Joseph L.: A Preliminary Study of Relaxation Methods for the Inviscid Conservative Gasdynamics Equations Using Flux Splitting. (NAS1-15852 Flow Simulations, Inc.) NASA CR-3415, March 1981, 53 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-13)
1016. Wentz, W. H., Jr.: Wind Tunnel Force and Pressure Tests of a 13% Thick Medium Speed Airfoil With 20% Aileron, 25% Slotted Flap and 10% Slot-Lip Spoiler. (NSG-1165 Wichita State University.) NASA CR-3439, June 1981, 116 p.
(Avail: IAC Subject Category 02 RTOP 505-31-33)
1017. White, S. N.: Feasibility Study for Integrating Thrust Vectoring as Primary Flight Control System. (NAS1-16442 Rockwell International Corporation.) NASA CR-165758, August 1981, 139 p.
(Avail: STIF Subject Category 02 RTOP 505-43-23)

1018. Wigley, D. A.: The Structure and Properties of Diffusion Assisted Bonded Joints in 17-4 PH, Tube 347, 15-5 PH and Nitronic 40 Stainless Steels. (NAS1-16000 Kentron International, Inc.; Subcontractor: The University of Southampton.) NASA CR-165745, July 1981, 30 p.
(Avail: NTIS Subject Category 26 RTOP 505-31-53)
1019. Wolf, S. W. D.: Model and Boundary Aerodynamic Data From High Blockage Two-Dimensional Airfoil Tests in a Shallow Unstreamlined Transonic Flexible Walled Test Section. (NSG-7172 The University of Southampton.) NASA CR-165685, April 1981, 90 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-53)

Journal Articles and Periodical Literature

1020. Campbell, James F.: Vortex Flow Aerodynamics - An Emerging Design Capability. Astronautics and Aeronautics, Volume 19, Number 5, May 1981, p. 54-58.
(Avail: AIAA Subject Category 02 RTOP 505-31-43)
1021. Frink, Neal T.; and Lamar, John E.: Analysis of Strake Vortex Breakdown Characteristics in Relation to Design Features. Journal of Aircraft, Volume 18, Number 4, April 1981, p. 252-257.
(Avail: AIAA Subject Category 02 RTOP 505-31-43)
1022. Johnson, Charles B.: A Study of Non-Adiabatic Boundary-Layer Stabilization Time in a Cryogenic Tunnel for Typical Wing and Fuselage Models. Journal of Aircraft, Volume 18, Number 11, November 1981, p. 913.
(Avail: AIAA Subject Category 02 RTOP 505-11-33)
1023. Lamar, J. E.: Comment on "Water Tunnel Flow Visualization: Insight Into Complex Three-Dimensional Flow Fields." Journal of Aircraft, Volume 18, Number 8, August 1981, p. 704.
(Avail: AIAA Subject Category 02 RTOP 505-31-43)
1024. Lamar, John E.; Schemensky, Roy T.; and Reddy, C. Subba: Development of a Vortex-Lift Design Procedure and Application to a Slender Maneuver-Wing Configuration. Journal of Aircraft, Volume 18, Number 4, April 1981, p. 259-267.
(Avail: AIAA Subject Category 02 RTOP 505-53-06)
1025. Owen, F. Kevin; Stainback, P. Calvin; and Harvey, William D.: Evaluation of Flow Quality Measurements in Two NASA Transonic Wind Tunnels. Journal of Aircraft, Volume 18, Number 6, June 1981, p. 451-457.
(Avail: AIAA Subject Category 09 RTOP 505-06-43)
1026. Paulson, John W., Jr.: An Analysis of Thrust-Induced Effects on the Longitudinal Aerodynamics of STOL Fighter Configurations. Journal of Aircraft, Volume 18, Number 11, November 1981, p. 951-955.
(Avail: AIAA Subject Category 02 RTOP 505-43-23)

1027. Scheiman, James; and Brooks, Joseph D.: Comparison of Experimental and Theoretical Turbulence Reduction From Screens, Honeycomb, and Honeycomb-Screen Combinations. Journal of Aircraft, Volume 18, Number 8, August 1981, p. 638-643.
(Avail: AIAA Subject Category 09 RTOP 505-11-13)
1028. Thibodeaux, J. J.; and Balakrishna, S.: Automatic Control of a 0.3 Meter Cryogenic Test Facility. Journal of Guidance and Control, Volume 4, Number 4, July/August 1981, p. 428-432.
(Avail: AIAA Subject Category 09 RTOP 505-31-53)

Meeting/Conference Papers

1029. Alston, Daisy W.: Statistical Model to Perform Error Analysis of Wind Tunnel Test Data Using the Techniques of Analysis of Variance and Regression Analysis. Presented at the National Technical Association, 53rd Annual Convention, August 4-8, 1981, Detroit, Michigan.
(Avail: NTA Subject Category 65 RTOP 505-32-13)
1030. *Berry, John D.: Quarter-Scale Testing of an Advanced Rotor System for the UH-1 Helicopter. Presented at the 37th American Helicopter Society Forum, May 17-20, 1981, New Orleans, Louisiana. AHS Paper No. 81-49.
(Avail: AHS, Proceedings Subject Category 02 RTOP 505-42-23)
1031. Bursik, Joseph W.; and Hall, Robert M.: Generalization of Low Pressure, Gas-Liquid, Metastable Sound Speed to High Pressures. Presented at the AIAA 16th Thermophysics Conference, June 23-25, 1981, Palo Alto, California. AIAA Paper No. 81-1063.
(Avail: AIAA Subject Category 34 RTOP 505-31-53)
1032. Dwoyer, Douglas L.: EET Theoretical Design Techniques. Presented at the ACEE Project Oral Status Review, September 14-18, 1981, Edwards, California.
(Avail: NTIS, NASA CP-2208 Subject Category 05 RTOP 534-02-13)
1033. Dwoyer, D. L.; and Thames, F. C.: Accuracy and Stability of Time-Split Finite-Difference Schemes. Presented at the AIAA 5th Computational Fluid Dynamics Conference, June 22-23, 1981, Palo Alto, California. AIAA Paper No. 81-1005.
(Avail: AIAA Subject Category 64 RTOP 505-31-13)
1034. Edwards, John W.: Flight Test Results of an Active Flutter Suppression System Installed on a Remotely Piloted Research Vehicle. Presented at the AIAA Dynamics Specialists Conference, April 9-10, 1981, Atlanta, Georgia. AIAA Paper No. 81-0655.
(Avail: AIAA Subject Category 05 RTOP 505-33-53)
1035. Green, Lawrence L.; and South, Jerry C., Jr.: Conservative Full-Potential Calculations for Axisymmetric, Transonic Flow. Presented at the AIAA 14th Fluid and Plasma Dynamics Conference, June 23-25, 1981, Palo Alto, California. AIAA Paper No. 81-1204.
(Avail: AIAA Subject Category 02 RTOP 505-31-13)

*Army Structures Laboratory, USARTL (AVRADCOM)

1036. Greene, George C.: Measured and Calculated Characteristics of Wind Turbine Noise. Presented at the Second DOE/NASA Wind Turbine Dynamics Workshop, February 24-26, 1981, Cleveland, Ohio.
(Avail: NTIS, NASA CP-2185 Subject Category 71 RTOP 505-31-43)
1037. Greene, George C.: Wake Vortex Alleviation. Presented at the AIAA International Air Transportation Conference, May 26-28, 1981, Atlantic City, New Jersey. AIAA Paper No. 81-0798.
(Avail: AIAA Subject Category 02 RTOP 505-31-43)
1038. Hafez, Mohamed; and Lovell, Donald: Numerical Solution of Transonic Stream Function Equation. Presented at the AIAA 5th Computational Fluid Dynamics Conference, June 22-23, 1981, Palo Alto, California. AIAA Paper No. 81-1017.
(Avail: AIAA Subject Category 64 RTOP 505-31-31)
1039. Harvey, W. D.; and Bobbitt, P. J.: Some Anomalies Between Wind Tunnel and Flight Transition Results. Presented at the AIAA 14th Fluid and Plasma Dynamics Conference, June 23-25, 1981, Palo Alto, California. AIAA Paper No. 81-1225.
(Avail: AIAA Subject Category 34 RTOP 505-31-33)
1040. *Hoad, Danny R.; and *Conner, David A.: Acoustic Performance Evaluation of an Advanced UH-1 Helicopter Main Rotor System. Presented at the 37th American Helicopter Society Forum, May 17-20, 1981, New Orleans, Louisiana. AHS Paper No. 81-58.
(Avail: AHS, Proceedings Subject Category 71 RTOP 505-42-23)
1041. Johnson, Charles B.; and Adcock, Jerry B.: Measurement of Recovery Temperature on an Airfoil in the Langley 0.3-m Transonic Cryogenic Tunnel. Presented at the AIAA 16th Thermophysics Conference, June 23-25, 1981, Palo Alto, California. AIAA Paper No. 81-1062.
(Avail: AIAA Subject Category 34 RTOP 505-31-53)
1042. Ladson, Charles, L.; and Ray, Edward J.: Status of Advanced Airfoil Tests in the Langley 0.3-Meter Transonic Cryogenic Tunnel. Presented at the ACEE Project Oral Status Review, September 14-18, 1981, Edwards, California.
(Avail: NTIS, NASA CP-2208 Subject Category 01 RTOP 534-02-13)
1043. Lamar, John E.; and Frink, Neal T.: Aerodynamic Features of Designed Strake-Wing Configurations. Presented at the AIAA 14th Fluid and Plasma Dynamics Conference, June 23-25, 1981, Palo Alto, California. AIAA Paper No. 81-1214.
(Avail: AIAA Subject Category 02 RTOP 505-31-43)
1044. Lawing, Pierce L.: A Survey of Heating and Turbulent Boundary Layer Characteristics of Several Hypersonic Research Aircraft Configurations. Presented at the AIAA 16th Thermophysics Conference, June 23-25, 1981, Palo Alto, California. AIAA Paper No. 81-1145.
(Avail: AIAA Subject Category 34 RTOP 505-31-13)

1045. Margason, Richard J.: Jet V/STOL Wind-Tunnel Simulation and Groundplane Effects. Presented at the AGARD Fluid Dynamics Panel Symposium on "The Fluid Dynamics of Jets With Applications to V/STOL," November 2-5, 1981, Lisbon, Portugal.
(Avail: AGARD Subject Category 02 RTOP 505-43-23)
1046. Morgan, Harry L., Jr.; and Kjeldgaard, Scott O.: Langley High-Lift Research on a High-Aspect-Ratio Supercritical Wing Configuration. Presented at the ACEE Project Oral Status Review, September 14-18, 1981, Edwards, California.
(Avail: NTIS, NASA CP-2208 Subject Category 05 RTOP 534-02-13)
1047. Polhamus, E. C.; and Boyden, R. P.: The Development of Cryogenic Wind Tunnels and Their Application to Maneuvering Aircraft Technology. Presented at the AGARD Flight Mechanics Panel Symposium On "Combat Aircraft Maneuverability," October 5-9, 1981, Florence, Italy.
(Avail: NTIS Subject Category 09 RTOP 505-31-53)
1048. Polhamus, Edward C.; and Toll, Thomas A.: Research Related to Variable Sweep Aircraft Development. Presented at the Air Force Historical Foundation Meeting, March 27, 1981, Hampton, Virginia.
(Avail: NTIS, NASA TM-83121 Subject Category 05 RTOP 505-31-53)
1049. Rao, D. M.; and Huffman, J. K.: Hinged Strakes for Enhanced Maneuverability at High Angles of Attack. Presented at the AIAA 19th Aerospace Sciences Meeting, January 12-15, 1981, St. Louis, Missouri. AIAA Paper No. 81-0357.
(Avail: AIAA Subject Category 02 RTOP 505-31-43)
1050. Sewall, W. G.: The Effects of Sidewall Boundary Layers in Two-Dimensional Subsonic and Transonic Wind Tunnels. Presented at the AIAA 14th Fluid and Plasma Dynamics Conference, June 23-25, 1981, Palo Alto, California. AIAA Paper No. 81-1297.
(Avail: AIAA Subject Category 09 RTOP 505-31-33)
1051. Somers, Dan M.: NASA Research Related to Sailplane Airfoils. Presented at The Soaring Society of America 1981 National Soaring Convention, January 14-18, 1981, Phoenix, Arizona.
(Avail: Soaring Society of America Subject Category 02 RTOP 505-31-33)
1052. Streett, Craig L.: Viscous-Inviscid Interaction for Transonic Wing-Body Configurations Including Wake Effects. Presented at the AIAA 14th Fluid and Plasma Dynamics Conference, June 23-25, 1981, Palo Alto, California. AIAA Paper No. 81-1266.
(Avail: AIAA Subject Category 02 RTOP 505-31-13)
1053. Sudhir, C. Mehrotra; and Gloss, Blair B.: Computation of Wind Tunnel Model Deflections. Presented at the AIAA/ASME/ASCE/AHS 22nd Structures, Structural Dynamics and Materials Conference, April 6-8, 1981, Atlanta, Georgia. AIAA Paper No. 81-0482-CP.
(Avail: AIAA Subject Category 02 RTOP 505-31-63)

1054. Wigley, D. A.; Sandefur, P. G., Jr.; and Lawing, P. L.: Preliminary Results on the Development of Vacuum Brazed Joints for Cryogenic Wind Tunnel Aerofoil Models. Presented at the International Cryogenic Materials Conference, San Diego, California, August 10-14, 1981.
(Avail: NTIS Subject Category 26 RTOP 505-31-53)

Computer Programs

1055. Boppe, Charles W. (Grumman Aerospace Corp.): WIBCO: Wing Body Code for Transonic Flow Field Analysis of Wing-Fuselage Configurations. Program No. LAR-12702. NASA Accession No. M80-10036. Released 1981.
(Avail: COSMIC Subject Category 02)
1056. Kemp, William B., Jr.: TWINTAN: A Transonic Wall Interference Analysis Method. Program No. LAR-12753. NASA Accession No. M80-10039. Released 1981.
(Avail: COSMIC Subject Category 09)
1057. Somers, Dan M. (Langley Research Center); and Eppler, Richard (University of Stuttgart, West Germany): PROFILE: The Eppler Program for the Design and Analysis of Low-Speed Airfoils. Program No. LAR-12727. NASA Accession No. M80-10068. Released 1981.
(Avail: COSMIC Subject Category 02)

Tech Briefs

1058. Bonner, E.; Clever, W.; Divan, P.; Dunn, K.; and Kojima, J. (Rockwell International Corp.): Aerodynamic Preliminary Analysis. NASA Tech Brief LAR-12404. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)
1059. Boppe, Charles W. (Grumman Aerospace Corporation): Transonic Flow Over Wing/Fuselage Configurations. NASA Tech Brief LAR-12702. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)
1060. Lawing, Pierce L.; Sandefur, Paul G., Jr.; and Wood, William H.: A Construction Technique for Wind-Tunnel Models. NASA Tech Brief LAR-12710. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)
1061. Patterson, James C., Jr.: Wingtip-Vortex Turbine Lowers Aircraft Drag. NASA Tech Brief LAR-12544. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)
1062. Somers, Dan M. (Langley Research Center); and Eppler, Richard (University of Stuttgart): The Design and Analysis of Low-Speed Airfoils. NASA Tech Brief LAR-12727. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)
1063. South, Jerry C., Jr.; and Keller, James D.: Inviscid Transonic Flow Over Axisymmetric Bodies. NASA Tech Brief LAR-12499. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)

Patents

1064. Lawing, Pierce L.; and Pagel, LaVerne L.: Cooling System For High Speed Aircraft. (NAS1-14981 McDonnell Aircraft Co.) U.S. Patent 4,273,304. Issued 1981.
(Avail: U.S Patent & Trademark Office Subject Category 05)

Oral Presentations to Conferences/Workshops

1065. *Bingham, Gene J.: The Aerodynamic Influences of Rotor Blade Airfoils, Twist, Taper, and Solidity on Hover and Forward Flight Performance. Presented at the 37th American Helicopter Forum, May 17-20, 1981, New Orleans, Louisiana.
1066. Fox, Charles; and Howell, Roger: A Data Base Management System Based on a Standard Interface File Concept. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
1067. Fox, Charles H., Jr.: The Use of a Standard Interface File Concept in the Acquisition, Reduction, Analysis, and Management of Engineering Data. Presented at the Workshop on Computer Science Research, November 2-5, 1981, Hampton, Virginia.
1068. Hall, Robert M.; Gooderum, Paul B.; and Dotson, Edward H.: Nitrogen Condensation-Comparison of Airfoil Experiments With Homogeneous Nucleation Theory. Presented at the 1981 Annual Meeting of the Virginia Academy of Science, May 12-15, 1981, Norfolk, Virginia.
1069. Montoya, Lawrence; Sims, Robert; Jacobs, Peter; and Flechner, Stuart, G.: KC-135 Wing and Winglet Flight Pressure Distributions, Loads, and Wing Deflection Results With Some Wind Tunnel Comparisons. Presented at KC-135 Winglet Meeting, September 16, 1981, NASA Dryden Flight Research Center, Edwards, California.
1070. Peterson, John B.: Wind Tunnel/Flight Correlation Program on the SB-70-1. Presented at the NASA Mini Workshop on Wind Tunnel/Flight Correlation, November 19-20, 1981, Hampton, Virginia.
1071. Salas, Manuel D.: Rotationally Induced Inviscid Wake Bubble. Presented at the AIAA 5th Computational Fluid Dynamics Conference (Open Forum), June 22-23, 1981, Palo Alto, California.
1072. Salas, M. D.; and Lovell, D. R.: Transonic Flow Over a Circular Cylinder. Presented at the Workshop on Transonic Flow Over a Circular Cylinder, September 1, 1981, Hampton, Virginia.
1073. Somers, Dan M.: NASA Airfoil Research. Presented at the Experimental Aircraft Association 1981 Annual Convention, August 1-8, 1981, Oshkosh, Wisconsin.

*Army Structures Laboratory, USARTL (AVRADCOM)

1074. South, Jerry C., Jr.: Review of Potential Theory for Transonic Flow Around a Cylinder. Presented at the Workshop on Transonic Flow Over a Circular Cylinder, September 1, 1981, Hampton, Virginia.
1075. Wornom, S. F.: Cylinder Results Obtained with Steger Code. Presented at the Workshop on Transonic Flow Over a Circular Cylinder, September 1, 1981, Hampton, Virginia.

PUBLICATIONS FOR OFFICE OF DIRECTOR FOR SPACE

Formal Reports

1076. Holloway, Paul F.; and Garrett, L. Bernard: Comparative Analyses of Space-to-Space Central Power Stations. NASA TP-1955, December 1981, 47 p.
(Avail: NTIS Subject Category 15 RTOP 506-62-43)

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Periodical Literature

No journal articles and periodical literature.

Meeting/Conference Papers

1077. Holloway, P. F.; and Garrett, L. B.: Utility of and Technology for a Space Central Power Station. Presented at the AIAA 2nd Conference on Large Space Platforms "Toward Permanent Manned Occupancy of Space," February 2-4, 1981, San Diego, California. AIAA Paper No. 81-0449.
(Avail: AIAA Subject Category 20 RTOP 542-01-13)

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

Oral Presentations to Conferences/Workshops

No oral presentations to conferences/workshops.

PUBLICATIONS FOR ATMOSPHERIC ENVIRONMENTAL SCIENCES DIVISION

Formal Reports

1078. Brewer, Dana A.; Remsberg, Ellis E.; and Woodbury, Gerard E.: A Diagnostic Model for Studying Daytime Urban Air-Quality Trends. NASA TP-1843, May 1981, 40 p.
(Avail: NTIS Subject Category 45 RTOP 146-20-10)
1079. Green, Richard N.: Comparison of Data Inversion Techniques for Remotely Sensed Wide-Angle Observations of Earth Emitted Radiation. NASA TP-1924, December 1981, 45 p.
(Avail: NTIS Subject Category 47 RTOP 146-10-06)
1080. Haggard, Kenneth V.; and Grose, William L.: Energetics of a Sudden Stratospheric Warming Simulated With a Three-Dimensional, Spectral, Quasi-Geostrophic Model. NASA TP-1847, May 1981, 27 p.
(Avail: NTIS Subject Category 47 RTOP 146-60-01)
1081. McCormick, M. Patrick: SAM II Measurements of the Polar Stratospheric Aerosol. Volume I - October 1978 to April 1979. NASA RP-1081, December 1981, 78 p.
(Avail: NTIS Subject Category 46 RTOP 665-10-40)
1082. McCormick, M. Patrick; Kent, Geoffrey S.; Yue, Glenn K.; and Cunnold, Derek M.: SAGE Measurements of the Stratospheric Aerosol Dispersion and Loading From the Soufrière Volcano. NASA TP-1922, November 1981, 21 p.
(Avail: NTIS Subject Category 46 RTOP 665-40-40)
1083. Orr, Harry D., III; and Rarig, Pamela L.: Preliminary Feasibility Analysis of a Pressure Modulator Radiometer for Remote Sensing of Tropospheric Constituents. NASA TM-81958, April 1981, 28 p.
(Avail: NTIS Subject Category 35 RTOP 146-20-10)
1084. Park, Jae H.; Rothman, L. S.; Rinsland, C. P.; Smith, M. A. H.; Richardson, D. J.; and Larsen, J. C.: Atlas of Absorption Lines From 0 to 17 900 cm^{-1} . NASA RP-1084, December 1981, 207 p.
(Avail: NTIS Subject Category 72 RTOP 620-14-00)
1085. Seinfeld, John H.; Allario, Frank; Bandeen, William R.; Chameides, William L.; Davis, Douglas D.; Hinkley, E. David; and Stewart, Richard W.: Report of the NASA Working Group on Tropospheric Program Planning. NASA RP-1062, April 1981, 161 p.
(Avail: NTIS Subject Category 46 RTOP 146-20-01)

Quick-Release Technical Memorandums

1086. McCormick, M. Patrick: Stratospheric Aerosols. NASA TM-83217, November 1981, 19 p.
(Avail: NTIS Subject Category 46 RTOP 619-12-30)

1087. Nealy, John E.; Goad, William K.; and Heath, D. Michele: Analysis of UV Protection Requirements and Testing of Candidate Attenuators for the HALOE Optical Instrument. NASA TM-83247, December 1981, 28 p.
(Avail: NTIS Subject Category 42 RTOP 620-14-00)

Contractor Reports

1088. Bartman, Fred L.: Time-Variable Earth's Albedo Model Characteristics and Applications to Satellite Sampling Errors. (NAG1-67 The University of Michigan.) NASA CR-165781, September 1981, 77 p.
(Avail: NTIS Subject Category 47 RTOP 146-10-06)
1089. Gormsen, Barbara B.: MAPS Computer Program Development. (NAS1-15679 Systems and Applied Sciences Corporation.) NASA CR-165699, March 1981, 18 p.
(Avail: STIF Subject Category 59 RTOP 618-22-31)
1090. Lange, R.; Savage, M.; and Peyton, B.: Design, Development, and Field Testing of Infrared Heterodyne Radiometer (IHR) for Remote Profiling of Tropospheric and Stratospheric Species. (NAS1-13223 Eaton Corporation.) NASA CR-3448, July 1981, 102 p.
(Avail: NTIS Subject Category 45 RTOP 506-61-53)
1091. Russell, Philip B.; Morley, Bruce M.; Livingston, John M.; Grams, Gerald W.; and Patterson, Edward M.: Improved Simulation of Aerosol, Cloud, and Density Measurements by Shuttle Lidar. (NAS1-16052 SRI International.) NASA CR-3473, November 1981, 167 p.
(Avail: NTIS Subject Category 46 RTOP 146-60-03)
1092. Sze, N. D.; Isaacs, R. G.; Ko, M.; and McElroy, M. B.: Atmospheric Studies Related to Aerospace Activities and Remote Sensing Technology. (NAS1-15943 Atmospheric and Environmental Research Company, Inc.) NASA CR-3410, March 1981, 140 p.
(Avail: NTIS Subject Category 46 RTOP 147-30-01)

Journal Articles and Periodical Literature

1093. Abbas, Mian M.; Shapiro, Gary L.; and Alvarez, J. M.: Inversion Technique for IR Heterodyne Sounding of Stratospheric Constituents from Space Platforms. Applied Optics, Volume 20, Number 21, November 1981, p. 3755-3762.
(Avail: OSA Subject Category 43 RTOP 506-61-33)
1094. Bess, T. Dale; Green, Richard N.; and Smith, G. Louis: Deconvolution of Wide Field of View Radiometer Measurements of Earth Emitted Radiation. Part II: Analysis of First Year of Nimbus 6 ERB Wide Field of View Earth Emitted Data. Journal of the Atmospheric Sciences, Volume 38, Number 3, March 1981, p. 474-488.
(Avail: AMS Subject Category 47 RTOP 146-10-06)
1095. Browell, E. V.; Carter, A. F.; and Wilkerson, T. A.: Airborne Differential Absorption Lidar System for Water Vapor Investigations. Optical Engineering, Volume 20, Number 1, January/February, 1981, p. 84-90.
(Avail: SPIE Subject Category 36 RTOP 146-30-03)

1096. Callis, L. B.; and Natarajan, Murali: Atmospheric Carbon Dioxide and Chlorofluoromethanes: Combined Effects on Stratospheric Ozone, Temperature, and Surface Temperature. Geophysical Research Letters, Volume 8, Number 6, June 1981, p. 587-590.
(Avail: AGU Subject Category 47 RTOP 198-30-01)
1097. Chuan, R. L.; Woods, D. C.; and McCormick, M. P.: Characterization of Aerosols From Eruptions of Mount St. Helens. Science, Volume 211, Number 4484, February 20, 1981, p. 830-832.
(Avail: AAAS Subject Category 42 RTOP 665-40-40)
1098. Costen, Robert C.: Jump Conditions for Fields That Have Infinite, Integrable Singularities at an Interface. Journal of Mathematical Physics, Volume 22, Number 7, July 1981, p. 1377-1385.
(Avail: AIP Subject Category 59 RTOP 146-50-02)
1099. Fisher, W.; Gille, J.; and Russell, J.: Water Vapor in the Stratosphere: Preliminary Results of the LIMS Experiment Aboard Nimbus 7. Space Research, Volume 1, 1981, p. 279-381.
(Avail: Pergamon Press Subject Category 46 RTOP 665-10-40)
1100. Fishman, Jack: The Distribution of NO_x and the Production of Ozone: Comments on "On the Origin of Tropospheric Ozone" by Liu et al. Journal of Geophysical Research - 3, Volume 86, Number C12, December 20, 1981, p. 12,161-12,164.
(Avail: AGU Subject Category 46 RTOP 146-20-08)
1101. Gille, J. C.; Russell, J. M.; and Bailey, P. L.: The LIMB Infrared Monitor of the Stratosphere (LIMS) Experiment: Temperature and Nitrogen Dioxide Results. Space Research, Volume 1, 1981, p. 267-270.
(Avail: Pergamon Press Subject Category 46 RTOP 655-10-40)
1102. Gomberg, Richard: Radiance Profile Enhancement for Solar Occultation Measurements. IEEE Transactions on Geoscience and Remote Sensing, Volume GE-19, Number 3, July 1981, p. 132-142.
(Avail: IEEE Subject Category 35 RTOP 506-61-33)
1103. Gordley, Larry L.; and Russell, James M., III: Rapid Inversion of Limb Radiance Data Using an Emissivity Growth Approximation. Applied Optics, Volume 20, Number 4, March 1, 1981, p. 807-813.
(Avail: OSA Subject Category 46 RTOP 665-10-40)
1104. Green, Richard N.: The Effect of Data Analysis Techniques on the Interpretation of Wide-Angle Longwave Radiation Measurements. Journal of Atmospheric Sciences, Volume 38, Number 9, September 1981, p. 2045-2055.
(Avail: AMS Subject Category 47 RTOP 146-10-06)
1105. Grose, William L.; and Haggard, Kenneth V.: Numerical Simulation of a Sudden Stratospheric Warming With a Three-Dimensional Spectral, Quasi-Geostrophic Model: Journal of Atmospheric Sciences, Volume 38, Number 7, July 1981, p. 1480-1497.
(Avail: AMS Subject Category 46 RTOP 146-60-01)

1106. Keating, Gerald M.: The Response of Ozone to Solar Activity Variations: A Review. Solar Physics, Volume 74, 1981, p. 321-347.
(Avail: D. Reidel Publishing Co. Subject Category 46 RTOP 146-40-01)
1107. Keating, G. M.; Lake, L. R.; Nicholson, J. Y., III; and Natarajan, M.: Global Ozone Long-Term Trends From Satellite Measurements and the Response to Solar Activity Variations. Journal of Geophysical Research - Green, Volume 86, Number C10, October 20, 1981, p. 9873-9880.
(Avail: AGU Subject Category 46 RTOP 146-40-01)
1108. Levine, J. S.; Augustsson, T. R.; Boughner, R. E.; Natarajan, M.; and Sacks, L. J.: Comets and the Photochemistry of the Paleoaerosphere. Comets and The Origin of Life, edited by C. Ponnamperna, D. Reidel Publishing Co., 1981, p. 161-190.
(Avail: D. Reidel Publishing Co. Subject Category 46 RTOP 198-30-02)
1109. Levine, Joel S.; and Graedel, Thomas E.: Photochemistry in Planetary Atmospheres. American Geophysical Union - EOS, Volume 62, Number 50, December 15, 1981, p. 1177-1181.
(Avail: AGU Subject Category 46 RTOP 146-20-10)
1110. Levine, Joel S.; Rogowski, Robert S.; Gregory, Gerald L.; Howell, William E.; and Fishman, Jack: Simultaneous Measurements of NO_x, NO, and O₃ Production in a Laboratory Electric Discharge: Atmospheric Implications. Geophysical Research Letters, Volume 8, Number 4, April 1981, p. 357-360.
(Avail: AGU Subject Category 46 RTOP 146-20-10)
1111. McCormick, M. P.: Monitoring Mount St. Helens. Nature, Volume 290, March 12, 1981, p. 88-89.
(Avail: Nature Magazine Subject Category 35 RTOP 665-40-40)
1112. McCormick, M. P.; Chu, W. P.; Grams, G. W.; Hamill, Patrick; Herman, B. M.; McMaster, L. R.; Pepin, T. J.; Russell, P. B.; Steele, H. M.; and Swisler, T. J.: High-Latitude Stratospheric Aerosols Measured by SAM II Satellite System in 1978 and 1979. Science, Volume 214, October 16, 1981, p. 328-331.
(Avail: AAAS Subject Category 46 RTOP 665-10-40)
1113. McCormick, M. P.; Chu, W. P.; McMaster, L. R.; Grams, G. W.; Herman, B. M.; Pepin, T. J.; Russell, P. B.; and Swisler, T. J.: SAM II Aerosol Profile Measurements, Poker Flat, Alaska; July 16-19, 1979. Geophysical Research Letters, Volume 8, Number 1, January 1981, p. 3-4.
(Avail: AGU Subject Category 46 RTOP 665-40-40)
1114. Natarajan, M.; Callis, Linwood; and Nealy, John E.: Solar UV Variability: Effects on Stratospheric Ozone, Trace Constituents and Thermal Structure. Pure and Applied Geophysics, Volume 119, 1980-81, p. 750-779.
(Avail: PAGEOPH Subject Category 47 RTOP 147-30-01)
1115. Newell, Reginald E.; Condon, Estelle P.; and Reichle, Henry G., Jr.: Measurements of CO and CH₄ in the Troposphere Over Saudi Arabia, India and the 1979 International Summer Experiment (MONEX). Journal of Geophysical Research, Volume 86, Number C10, October 20, 1981, p. 9833-9838.
(Avail: American Geophysical Union Subject Category 47 RTOP 146-20-31)

1116. Prior, Edwin J.; Schiess, James R.; and McDougal, David S.: Approach to Forecasting Daily Maximum Ozone Levels in St. Louis. Environmental Science and Technology, Volume 15, Number 4, April 1981, p. 430-436.
(Avail: ACS Subject Category 45 RTOP 146-20-10)
1117. Rinsland, Curtis P.; Smith, Mary Ann H.; Russell, James M., III; Park, Jae H.; and Farmer, Crofton B.: Stratospheric Measurements of Continuous Absorption Near 2400 cm^{-1} . Journal of Applied Optics, Volume 20, Number 24, December 15, 1981, p. 4167-4171.
(Avail: OSA Subject Category 46 RTOP 620-14-00)
1118. Russell, James M., III; Gille, John C.; Remsberg, Ellis E.; and Gordley, Larry L.: Satellite Observation of Upper Atmospheric O_3 and HNO_3 from the Limb Infrared Monitor of the Stratosphere (LIMS) Experiment on Nimbus 7. Space Research, Volume 1, 1981, p. 271-277.
(Avail: Pergamon Press Subject Category 46 RTOP 665-10-40)
1119. Russell, P. B.; McCormick, M. P.; Swissler, T. J.; Chu, W. P.; Livingston, J. M.; Fuller, W. H.; Rosen, J. M.; Hofmann, D. J.; McMaster, L. R.; Woods, D. C.; and Pepin, T. J.: Satellite and Correlative Measurements of the Stratospheric Aerosol: II. Comparison of Measurements Made by SAM II, Dustsondes, and an Airborne Lidar. Journal of Atmospheric Sciences, Volume 38, Number 6, June 1981, p. 1295-1312.
(Avail: AMS Subject Category 35 RTOP 665-10-40)
1120. Russell, P. B.; Swissler, T. J.; McCormick, M. P.; Chu, W. P.; Livingston, J. M.; and Pepin, T. J.: Satellite and Correlative Measurements of the Stratospheric Aerosol: I. An Optical Model for Data Conversions. Journal of Atmospheric Sciences, Volume 38, Number 6, June 1981, p. 1279-1294.
(Avail: AMS Subject Category 35 RTOP 665-10-40)
1121. Seiler, W.; and Fishman, Jack: The Distribution of Carbon Monoxide and Ozone in the Free Troposphere. Journal of Geophysical Research, Volume 86, Number C8, August 1981, p. 7255-7265.
(Avail: AGU Subject Category 46 RTOP 146-20-10)
1122. Smith, G. Louis; and Green, Richard N.: Deconvolution of Wide Field of View Radiometer Measurements of Earth Emitted Radiation - Part I: Theory. Journal of the Atmospheric Sciences, Volume 38, Number 3, March 1981, p. 461-473.
(Avail: AMS Subject Category 47 RTOP 146-10-03)
1123. Tolson, R. H.: Spatial and Temporal Variations of Monthly Mean Total Columnar Ozone Derived From 7 Years of BUW Data. Journal of Geophysical Research, Volume 86, Number C8, August 20, 1981, p. 7312-7330.
(Avail: AGU Subject Category 47 RTOP 146-60-01)

Meeting/Conference Papers

1124. Abbas, Mian M.; Shapiro, Gary L.; Allario, Frank; and Alvarez, J. M.: Spectral Line Inversion for Sounding of Stratospheric Minor Constituents by Infrared Heterodyne Technique from Balloon Altitudes. Presented at the Society of Photo-Optical Instrumentation Engineers Technical Symposium East '81, April 20-24, 1981, Washington, D.C. SPIE Paper No. 286-11, Volume 286, p. 73-78.
(Avail: SPIE Subject Category 43 RTOP 506-61-33)
1125. Barkstrom, Bruce R.: An Example of the Nonlinearity of Clear and Cloudy Radiant Exitances in the Presence of Three-Dimensional Cloud Structure. Presented at the American Meteorological Society Fourth Conference on Atmospheric Radiation, June 16-18, 1981, Toronto, Ontario, Canada.
(Avail: AMS, Proceedings Subject Category 47 RTOP 619-12-20)
1126. Bess, T. Dale; and Smith, G. Louis: Time and Space Spectra of Earth-Emitted Radiation at Large Scales. Presented at the American Meteorological Society Fourth Conference on Atmospheric Radiation, June 16-18, 1981, Toronto, Ontario, Canada.
(Avail: AMS, Proceedings Subject Category 47 RTOP 146-10-06)
1127. Browell, Edward V.: Lidar Measurements of Tropospheric Gases. Presented at the Society of Photo-Optical Instrumentation Engineers Technical Symposium East '81, April 20-24, 1981, Washington, D.C. SPIE Paper No. 286-12, Volume 286, p. 79-86.
(Avail: SPIE, Proceedings Subject Category 46 RTOP 146-20-10)
1128. Browell, E. V.; and Shipley, S. T.: Lidar Meteorology. Presented at the 1981 International Geoscience and Remote Sensing Symposium (IGARRSS '81), June 8-10, 1981, Washington, D.C.
(Avail: IEEE Symposium Digest, IGARRSS '81 Subject Category 47 RTOP 146-30-03)
1129. Green, Richard N.: Simulation of a Numerical Filter for Enhancing Earth Radiation Budget Measurements. Presented at the American Meteorological Society Fourth Conference on Atmospheric Radiation, June 16-18, 1981, Toronto, Ontario, Canada.
(Avail: AMS, Proceedings Subject Category 47 RTOP 619-12-20)
1130. Levine, Joel S.: Biogenic Gases. Origin and Evolution of Life-Implications for the Planets: A Scientific Strategy for the 1980's (Released 1981), p. 30-35.
(Avail: National Academy of Sciences Subject Category 46 RTOP 146-20-10)
1131. Levine, Joel S.: Remote Detection of Tropospheric Gases. Interaction of the Biota With the Atmosphere and Sediments (Final Report of the NASA Workshop on Global Ecology, October 18-20, 1979, Washington, D.C.), edited by M. N. Dastoor, L. Margulis, and K. H. Nealson, 1981, p. 43-53.
(Avail: NTIS Subject Category 46 RTOP 146-20-10)

1132. Levine, Joel S.: Biogenic Atmospheric Gases: Past and Present. Interaction of the Biota With the Atmosphere and Sediments (Final Report of the NASA Workshop on Global Ecology, October 18-20, 1979, Washington, D.C.), edited by M. N. Dastoor, L. Margulis, and K. H. Nealson, 1981, p. 129-132.
(Avail: NTIS Subject Category 46 RTOP 146-20-10)
1133. Levine, Joel S.; and Augustsson, Tommy R.: Did the Earth Ever Have a Jovian Prebiological Paleoatmosphere? Presented at the Sixth College Park Colloquia on Chemical Evolution: The Voyager Mission--Implications for Planetary Biology; Session IV: Implications for the Search for Extraterrestrial Life, October 5-6, 1981, College Park, Maryland.
(Avail: University of Maryland Laboratory of Chemical Evolution Subject Category 45 RTOP 198-30-02)
1134. McCormick, M. Patrick: Lidar Measurements of Mount St. Helens Effluents. Presented at the Society of Photo-Optical Instrumentation Engineers Technical Symposium East '81, April 20-24, 1981, Washington, D.C. SPIE Paper No. 287-04, Volume 278, p. 19-22.
(Avail: SPIE, Proceedings Subject Category 46 RTOP 146-10-06)
1135. Smith, G. Louis: Deconvolution of Wide-Field-of-View Satellite Radiometer Measurements of Reflected Solar Radiation. Presented at the American Meteorological Society Fourth Conference on Atmospheric Radiation, June 16-18, 1981, Toronto, Ontario, Canada.
(Avail: AMS, Proceedings Subject Category 47 RTOP 146-10-06)
1136. Smith, G. Louis; and House, Frederick B.: An Optimal Numerical Filter for Wide-Field-of-View Measurements of Earth-Emitted Radiation. Presented at the AMS Seventh Conference on Probability and Statistics in Atmospheric Sciences, November 2-6, 1981, Monterey, California.
(Avail: AMS Subject Category 47 RTOP 619-12-30)
1137. Smith, Mary Ann; Russell, James M., III; Park, Jae H.; Rinsland, Curtis P.; and Farmer, Crofton B.: Measurements of Continuum Absorption Near 2400 cm^{-1} in the Lower Stratosphere. Presented at the American Meteorological Society Fourth Conference on Atmospheric Radiation, June 16-18, 1981, Toronto, Ontario, Canada.
(Avail: AMS, Proceedings Subject Category 46 RTOP 620-14-00)
1138. Stephenson-Graves, Denise: An Analysis of the Effect of Hemispheric Land-Ocean Areal Distribution Upon the Earth's Emitted Longwave Radiation. Presented at the American Meteorological Society Fourth Conference on Atmospheric Radiation, June 16-18, 1981, Toronto, Ontario, Canada.
(Avail: AMS, Proceedings Subject Category 47 RTOP 146-10-06)
1139. Subramanian, S. V.; Tiwari, S. N.; and Suttles, J. T.: Sensitivity Analysis of Upwelling Thermal Radiance in Presence of Clouds. Presented at the AIAA 16th Thermophysics Conference, June 23-25, 1981, Palo Alto, California. AIAA Paper No. 81-1095.
(Avail: AIAA Subject Category 47 RTOP 146-10-06)

1140. Suttles, J. T.; Barkstrom, B. R.; and Tiwari, S. N.: Effect of Atmospheric Scattering and Surface Reflection on Upwelling Solar Radiation. Presented at the AIAA 16th Thermophysics Conference, June 23-25, 1981, Palo Alto, California. AIAA Paper No. 81-1094.
(Avail: AIAA Subject Category 47 RTOP 146-10-06)
1141. Tolson, Robert H.: A Technique for Evaluating the Influence of Spatial Sampling on the Determination of Global Mean Total Columnar Ozone. Presented at the AMS Seventh Conference on Probability and Statistics in Atmospheric Sciences, November 2-6, 1981, Monterey, California.
(Avail: AMS Subject Category 47 RTOP 146-60-01)
1142. Wallio, H. Andrew; Reichle, Henry G., Jr.; Casas, Joseph C.; and Gormsen, Barabara B.: A New Method for Inferring Carbon Monoxide Concentrations from Gas Filter Radiometer Data. Presented at the American Meteorological Society Fourth Conference on Atmospheric Radiation, June 16-18, 1981, Toronto, Ontario, Canada.
(Avail: AMS, Proceedings Subject Category 47 RTOP 146-20-10)
1143. Woodbury, G. E.; and Smith, G. Louis: Spatial Variability of Earth-Emitted Radiation. Presented at the AMS Seventh Conference on Probability and Statistics in Atmospheric Sciences, November 2-6, 1981, Monterey, California.
(Avail: AMS Subject Category 47 RTOP 146-10-06)
1144. Woods, David C.; and Chuan, Raymond L.: Characterization of Suspended Particles in the Space Shuttle Exhaust Cloud. Presented at the 3rd EPA Symposium on Advances in Particulate Sampling and Measurement, October 19-21, 1981, Daytona Beach, Florida.
(Avail: EPA Subject Category 46 RTOP 989-15-20)
1145. Youngbluth, O.; Storey, R. W.; Clendenin, C. G.; Jones, S.; and Leighty, B.: Ozone Profiles from Tethered Balloon Measurements in an Urban Plume Experiment. Presented at IEEE SouthEastCon '81, Huntsville, Alabama, April 5-8, 1981.
(Avail: IEEE, Proceedings Subject Category 33 RTOP 665-40-40)

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

Oral Presentations to Conferences/Workshops

1146. Allario, Frank; and Levine, Joel S.: Scientific and Instrumentation Requirements for a Global Tropospheric Research Program. Presented at the AIAA 19th Aerospace Sciences Meeting, January 12-15, 1981, St. Louis, Missouri.
1147. Barkstrom, B. R.; Dodgen, J. A.; Jalink, A., Jr.; Raper, J. L.; Duncan, C. H.; and Gruber, A.: The Role of Characterization, Calibration and Validation in Measuring the Earth's Radiation Budget From Satellites. Presented at the IUGG/IAMAP Third Scientific Assembly of the International Association of Meteorology and Atmospheric Physics, August 17-28, 1981, Hamburg, West Germany.
1148. Boughner, R. E.: The Influence of Thermal and Dynamical Variations on the Natural Variability of Species Concentrations. Presented at the 1981 American Geophysical Union Fall Meeting, December 7-11, 1981, San Francisco, California. (Abstract published in EOS, Transactions of AGU, Volume 62, Number 45, November 10, 1981, p. 973.)
1149. Brewer, D. A.; Augustsson, T. R.; and Levine, J. S.: The Photochemistry of PAN in the Global Troposphere. Presented at the 1981 Spring Meeting of the American Geophysical Union, May 25-29, 1981, Baltimore, Maryland. (Abstract published in EOS, Transactions of AGU, Volume 62, Number 17, April 1981, p. 290.)
1150. Browell, Edward V.: Airborne and Spaceborne Lidar Investigations of Tropospheric Trace Species. Presented at the AIAA 19th Aerospace Sciences Meeting, January 12-15, 1981, St. Louis, Missouri.
1151. Browell, E. V.; Carter, A. F.; and Shipley, S. T.: Measurements of Ozone and Aerosol Profiles With the NASA Langley Airborne DIAL Lidar System. Presented at the Conference on Lasers and Electro-Optics (CLEO '81), June 10-12, 1981, Washington, D.C.
1152. Browell, E. V.; Shipley, S. T.; Rosenberg, A.; Hogan, D. B.; and Wilkerson, T. D.: An Airborne Lidar for Simultaneous Measurements of Temperature and Water Vapor. Presented at the IUGG/IAMAP Third Scientific Assembly of the International Association of Meteorology and Atmospheric Physics, August 17-28, 1981, Hamburg, West Germany.
1153. Callis, L. B.: Effect of Changes in Ozone, Solar UV Flux, and Solar Constant on Stratospheric Zonal Temperature and Wind Fields. Presented at the 1981 American Geophysical Union Fall Meeting, December 7-11, 1981, San Francisco, California. (Abstract published in EOS, Transactions of AGU, Volume 62, Number 45, November 10, 1981, p. 974.)
1154. Callis, Linwood B.; Boughner, Robert E.; and Natarajan, Murali: On the Relationship Between the Greenhouse Effect and Middle Atmospheric Photochemistry. Presented at the IUGG/IAMAP Third Scientific Assembly of the International Association of Meteorology and Atmospheric Physics, August 17-28, 1981, Hamburg, West Germany.

1155. Costen, R. C.: Airfoils That Prevent Plume Downwash in Chimney Wakes. Presented at the Joint Meeting of the Pee Dee Section of the ASME and the Society of Professional Engineers, February 20, 1981, Florence, South Carolina.
1156. Fishman, Jack: Modeling Global-Scale Geochemical Cycles in the Troposphere. Presented at the 1981 Gordon Conference on Environmental Science, June 15-19, 1981, New Hampton, New Hampshire.
1157. Grose, W. L.; Blackshear, W. T.; and Turner, R. E.: A Seasonal Simulation of Stratospheric Circulation With a Spectral Model. Presented at the Eighth Meeting of the European Geophysical Society, August 24-29, 1981, Uppsala, Sweden. (Abstract published in EOS, Transactions of AGU, Volume 62, Number 45, November 10, 1981, p. 798.)
1158. Keating, G. M.; Craven, J. D.; and Frank, L. A.: The Field of Total Ozone as Observed with the DE Imaging Instrumentation. Presented at the 1981 American Geophysical Union Fall Meeting, December 7-11, 1981, San Francisco, California. (Abstract published in EOS, Transactions of AGU, Volume 62, Number 45, November 10, 1981, p. 996.)
1159. Keating, G. M.; Frank, L.; Craven, J.; Young, D.; Nicholson, J., III; Klenk, K.; and Bhartia, P.: Initial Ozone Measurements From the SAI Experiment Aboard Dynamics Explorer 1. Presented at the 1981 American Geophysical Union Fall Meeting, December 7-11, 1981, San Francisco, California. (Abstract published in EOS, Transactions of AGU, Volume 62, Number 45, November 10, 1981, p. 887.)
1160. Keating, G. M.; Taylor, H.; Niemann, H.; Nicholson, J.; Lake, L.; Young, D.; and Fox, J.: Response of the Venus Upper Atmosphere to Solar EUV Variations. Presented at the International Conference on The Venus Environment, November 1-6, 1981, Palo Alto, California.
1161. Keating, Gerald M.; and Nicholson, John Y., III: Venus Thermospheric Response to Solar Activity Variations. Presented at the 1981 Spring Meeting of the American Geophysical Union, May 25-29, 1981, Baltimore, Maryland. (Abstract published in EOS, Transactions of AGU, Volume 62, Number 17, April 28, 1981, p. 319.)
1162. Lawrence, James D., Jr.: Need for Remote Sensing Systems of the Atmosphere. Presented at the Conference on Lasers and Electro-Optics (CLEO '81), June 10-12, 1981, Washington, D.C.
1163. Levine, Joel S.; Brooke, Robert R.; Shaw, Edwin F.; and Chameides, William L.: Aircraft Measurements of N₂O Enhancement in Thunderstorm Lightning. Presented at the 1981 Spring Meeting of the American Geophysical Union, May 25-29, 1981, Baltimore, Maryland. (Abstract published in EOS, Transactions of AGU, Volume 62, Number 17, April 28, 1981, p. 290.)
1164. McCormick, M. P.: Global Stratospheric Aerosol Loading and Dispersion Due to the Eruptions of Mount St. Helens and La Soufrière. Presented at the IUGG/IAMAP Third Scientific Assembly of the International Association of Meteorology and Atmospheric Physics, August 17-28, 1981, Hamburg, West Germany.

1165. McCormick, M. P.: Stratospheric Aerosol and Ozone Measurements by SAM II and SAGE Satellite Sensors. Presented at the IUGG/IAMAP Third Scientific Assembly of the International Association of Meteorology and Atmospheric Physics, August 17-28, 1981, Hamburg, West Germany.
1166. Natarajan, Murali; and Callis, Linwood B.: A Theoretical Study of the Natural Variability in Upper Stratospheric Ozone. Presented at the 1981 American Geophysical Union Fall Meeting, December 7-11, 1981, San Francisco, California. (Abstract published in EOS, Transactions of AGU, Volume 62, Number 45, November 10, 1981, p. 877.)
1167. Niemann, H. B.; Kasprzak, W. T.; Hedin, A. E.; Taylor, H. A., Jr.; Brinton, H. C.; Mayr, H. G.; Spencer, N. W.; Von Zahn, U.; and Keating, G. M.: Diurnal Variations of the Neutral Gas Composition, Kinetic Temperature and Gas Density in the Thermosphere and Exosphere of Venus. Presented at the International Conference on The Venus Environment, November 1-6, 1981, Palo Alto, California.
1168. Reichle, Henry G., Jr.; Condon, Estelle P.; and Saylor, Mary: First Results of the MONEX Remote Sensor Measurements of Carbon Monoxide. Presented at the American Meteorological Society Fourth Conference on Atmospheric Radiation, June 16-18, 1981, Toronto, Ontario, Canada.
1169. Rinsland, C. P.; Smith, M. A. H.; Seals, R. K.; Larsen, J. C.; Murcray, D. G.; and Goldman, A.: Measurement of Continuum Absorption by O₂ in the Stratosphere. Presented at the 1981 American Geophysical Union Fall Meeting, December 7-11, 1981, San Francisco, California. (Abstract published in EOS, Transactions of AGU, Volume 62, Number 45, November 10, 1981, p. 973.)
1170. Russell, James M., III; Gille, John C.; Remsberg, Ellis E.; Gordley, Larry L.; and Bailey, Paul L.: The Climatology of Stratospheric Water Vapor as Measured by LIMS. Presented at the IUGG/IAMAP Third Scientific Assembly of the International Association of Meteorology and Atmospheric Physics, August 17-28, 1981, Hamburg, West Germany.
1171. Russell, P. B.; Jones, L. B.; Lee, J. D.; Swissler, T. J.; and McCormick, M. P.: Comparison of Stratospheric Aerosol Measurements by the SAM II and SAGE Satellite Sensors, Dustsondes, Lidar, Impactor, and Filter Samplers. Presented at the 1981 American Geophysical Union Fall Meeting, December 7-11, 1981, San Francisco, California. (Abstract published in EOS, Transactions of AGU, Volume 62, Number 45, November 10, 1981, p. 887.)
1172. Shipley, S. T.; and Browell, E. V.: Airborne Differential Absorption LIDAR Measurements of the Planetary Boundary Layer. Presented at the American Meteorological Society 5th Symposium on Turbulence, Diffusion and Air Pollution, March 9-13, 1981, Atlanta, Georgia.
1173. Turner, R. E.; Blackshear, W. T.; Grose, W. L.; and Remsberg, E. E.: Simulation of the Transport of a Volcanic Injected Tracer. Presented at the American Meteorological Society Third Conference on the Meteorology of the Upper Atmosphere, January 19-22, 1981, San Diego, California.

PUBLICATIONS FOR SPACE SYSTEMS DIVISION

Formal Reports

1174. Calloway, Robert L.: Force and Moment, Flow-Visualization, and Boundary-Layer Tests on a Shuttle Orbiter Model at Mach 6. NASA TP-1952, December 1981, 24 p.
(Avail: NTIS Subject Category 02 RTOP 506-63-13)
1175. Garrett, L. Bernard: Interactive Design and Analysis of Future Large Spacecraft Concepts. NASA TP-1937, December 1981, 32 p.
(Avail: NTIS Subject Category 18 RTOP 506-62-43)
1176. Humes, Donald H.: Meteoroid Bumper Experiment on Explorer 46. NASA TP-1879, July 1981, 29 p.
(Avail: NTIS Subject Category 18 RTOP 506-55-13)
1177. Miller, Charles G., III: Comparison of Thin-Film Resistance Heat-Transfer Gages With Thin-Skin Transient Calorimeter Gages in Conventional-Hypersonic Wind Tunnels. NASA TM-83197, December 1981, 91 p.
(Avail: NTIS Subject Category 34 RTOP 506-51-23)
1178. Miller, Charles G., III; and Gnoffo, Peter A.: Pressure Distributions and Shock Shapes for 12.84°/7° On-Axis and Bent-Nose Biconics in Air at Mach 6. NASA TM-83222, December 1981, 124 p.
(Avail: NTIS Subject Category 02 RTOP 506-51-23)
1179. Townsend, Lawrence W.: Optical-Model Abrasion Cross Sections for High-Energy Heavy Ions. NASA TP-1893, July 1981, 16 p.
(Avail: NTIS Subject Category 73 RTOP 199-20-76)
1180. Wright, Robert L. (editor): The Microwave Radiometer Spacecraft - A Design Study. NASA RP-1079, December 1981, 250 p.
(Avail: NTIS Subject Category 18 RTOP 540-02-13)

Quick-Release Technical Memorandums

1181. Bradley, Pamela F.; and Throckmorton, David A.: Space Shuttle Orbiter Flight Heating Rate Measurement Sensitivity to Thermal Protection System Uncertainties. NASA TM-83138, June 1981, 39 p.
(Avail: NTIS Subject Category 34 RTOP 506-51-33)
1182. Buoncristiani, A. M.; Byvik, C. E.; and Smith, B. T.: Thermodynamic Limits to the Efficiency of Solar Energy Conversion by Quantum Devices. NASA TM-83228, November 1981, 13 p.
(Avail: NTIS Subject Category 44 RTOP 506-55-13)
1183. Buoncristiani, A. M.; Byvik, C. E.; and Smith, B. T.: The Ultimate Efficiency of Photosensitive Systems. NASA TM-83230, December 1981, 21 p.
(Avail: NTIS Subject Category 44 RTOP 506-55-13)

1184. Byvik, C. E.; Buoncristiani, A. M.; and Smith, B. T.: Thermodynamic Limits for Solar Energy Conversion by a Quantum-Thermal Hybrid System. NASA TM-83229, November 1981, 19 p.
(Avail: NTIS Subject Category 44 RTOP 506-55-13)
1185. Champine, Gloria R.: Langley's Space Shuttle Technology - A Bibliography. NASA TM-78651, July 1981, 66 p.
(Avail: NTIS Subject Category 16 RTOP 506-63-13)
1186. Lee, Ja H.; and Hohl, Frank: Solar-Driven Liquid Metal Magnetohydrodynamic Generator. NASA TM-81965, May 1981, 15 p.
(Avail: NTIS Subject Category 75 RTOP 506-55-13)
1187. Phillips, W. Pelham: Space Shuttle Orbiter Trimmed Center-of-Gravity Extension Study: Volume VII - Effects of Configuration Modifications on the Subsonic Aerodynamic Characteristics of the 140 A/B Orbiter at High Reynolds Numbers. NASA TM-72661, March 1981, 89 p.
(Avail: NTIS Subject Category 15 RTOP 506-63-13)
1188. Sutton, Kenneth: Relations for the Thermodynamic and Transport Properties in the Testing Environment of the Langley Hypersonic CF_4 Tunnel. NASA TM-83220, October 1981, 39 p.
(Avail: NTIS Subject Category 34 RTOP 506-51-13)
1189. Thomas, Carolyn C.: A User's Guide for DTIZE - An Interactive Digitizing and Graphical Editing Computer Program. NASA TM-81919, January 1981, 52 p.
(Avail: NTIS Subject Category 61 RTOP 540-02-13)
1190. Wilhite, Alan W.: The Aerospace Vehicle Interactive Design System. NASA TM-81957, February 1981, 24 p.
(Avail: NTIS Subject Category 18 RTOP 506-51-13)

Contractor Reports

1191. Farrell, C. E.; and Zimbelman, H. F.: Advanced Space Systems Analysis Software - Technical, User, and Programmer Guide. (NAS1-16447 Martin Marietta Corporation.) NASA CR-165798, September 1981, 168 p.
(Avail: NTIS Subject Category 18 RTOP 540-01-13)
1192. Findlay, John T.; and Kelly, G. Mel: Pioneer Venus Data Analyses - A Summary. (NAS1-15647 Analytical Mechanics Associates, Inc.) NASA CR-165688, April 1981, 21 p.
(Avail: STIF Subject Category 91 RTOP 506-51-33)
1193. Garrahan, J. G.: Heat Transfer Software System Description and User's Guide. (NAS1-16422 Computer Sciences Corporation.) NASA CR-165780, October 1981, 82 p.
(Avail: STIF Subject Category 15 RTOP 506-51-33)
1194. Hedgepeth, John M.; Miller, Richard K.; and Knapp, Karl: Conceptual Design Studies for Large Free-Flying Solar-Reflector Spacecraft. (NAS1-15347 Astro Research Corporation.) NASA CR-3438, June 1981, 119 p.
(Avail: NTIS Subject Category 18 RTOP 506-17-13)

1195. Hinson, Edwin W.: SUMS Preliminary Design and Data Analysis Development. (NAS1-15772 Systems and Applied Sciences Corporation.) NASA CR-165696, May 1981, 58 p.
(Avail: NTIS Subject Category 35 RTOP 506-51-33)
1196. Holden, Michael S.: An Experimental Study of Massive Blowing From a Nosed Tip During Jovian Entry. (NAS1-15948 Calspan Corporation.) NASA CR-165756, November 1981, 59 p.
(Avail: NTIS Subject Category 34 RTOP 506-51-13)
1197. Kelly, G. M.: Pioneer Venus Data Analyses - Progress Report No. 15. (NAS1-15647 Analytical Mechanics Associates, Inc.) NASA CR-165695, February 1981, 169 p.
(Avail: STIF Subject Category 91 RTOP 506-51-33)
1198. Mihora, D. J.: Test Progress on the Electrostatic Membrane Reflector. (NAS1-16133 General Research Corporation.) NASA CR-165792, June 1981, 130 p.
(Avail: NTIS Subject Category 33 RTOP 506-62-43)
1199. Oh, I. H.: Space Shuttle Wing Surface Heating Rate Correction Program (WISHC) System Description and User's Guide. (NAS1-16422 Computer Sciences Corporation.) NASA CR-165785, October 1981, 126 p.
(Avail: STIF Subject Category 15 RTOP 506-51-33)
1200. Park, A. Colton; and Greene, Christopher S.: Advanced Space Systems Analysis (ASSA). (NAS1-16447 Martin Marietta Corporation.) NASA CR-165797, 1981.
(Avail: NTIS (Pending) Subject Category 18 RTOP 542-01-13)
1201. Tiwari, S. N.; and Subramanian, S. V.: Influence of Nonequilibrium Radiation and Shape Change on Aerothermal Environment of a Jovian Entry Body. (NSG-1500 Old Dominion University.) NASA CR-3432, May 1981, 173 p.
(Avail: NTIS Subject Category 34 RTOP 506-51-23)

Journal Articles and Periodical Literature

1202. Armaly, Bassem F.; and Sutton, Kenneth: Viscosity of Multicomponent Partially Ionized Gas Mixtures Associated with Jovian Entry. AIAA Progress Series in Astronautics and Aeronautics, Aerothermodynamics and Planetary Entry, Volume 77, edited by A. L. Crosbie, 1981, p. 335-350.
(Avail: AIAA Subject Category 34 RTOP 506-51-23)
1203. DeYoung, R. J.: Kilowatt Multiple-Path ³He-Ar Nuclear-Pumped Laser. Applied Physics Letters, Volume 38, Number 5, March 1, 1981, p. 297-298.
(Avail: AIP Subject Category 36 RTOP 506-55-13)
1204. DeYoung, Russell J.: Multiple-Path Fission-Foil Nuclear Lasing of Ar-Xe. Applied Physics Letters, Volume 39, Number 8, October 15, 1981, p. 585-587.
(Avail: AIP Subject Category 44 RTOP 506-55-13)
1205. Graves, R. A., Jr.; and Hamilton, H. H., II: Simple, Numerically Generated Orthogonal Coordinate System for Viscous Flow. AIAA Journal, Volume 19, Number 2, February 1981, p. 133-134.
(Avail: AIAA Subject Category 64 RTOP 506-51-23)

1206. Holloway, P. H.; and Outlaw, R. A.: The Effects of Temperature Upon NiO Formation and Oxygen Removed on NiO (110). Surface Science, 1981, p. 300-316.
(Avail: North-Holland Publishing Co. Subject Category 26
RTOP 506-55-43)
1207. Hook, Ray: Forecasting the 80's - Space Systems. Astronautics and Aeronautics, Volume 19, Numbers 7&8, July/August 1981, p. 32-34.
(Avail: AIAA Subject Category 16 RTOP 506-62-43)
1208. Jalufka, N. W.: Direct Nuclear Excitation of a $^3\text{He-CO}_2$ Gas Mixture. Applied Physics Letters, Volume 39, Number 3, August 1, 1981, p. 190-192.
(Avail: AIP Subject Category 36 RTOP 506-55-13)
1209. Jalufka, N. W.; and Hohl, F.: A Direct Nuclear-Pumped $^3\text{He-CO}$ Laser. Applied Physics Letters, Volume 39, Number 2, July 15, 1981, p. 139-142.
(Avail: AIP Subject Category 36 RTOP 506-55-13)
1210. Jalufka, Nelson W.: Nuclear-Pumped Lasing of $^3\text{He-Xe}$ at 2.63 μm . Applied Physics Letters, Volume 39, Number 7, October 1, 1981, p. 535-536.
(Avail: AIP Subject Category 36 RTOP 506-55-13)
1211. Jalufka, Nelson W.: Direct Nuclear-Pumped Laser Amplifier. Applied Physics Letters, Volume 39, Number 9, November 1, 1981, p. 690-692.
(Avail: AIP Subject Category 16 RTOP 506-55-13)
1212. Kumar, A.; Graves, R. A., Jr.; Weilmuenster, K. J.; and Tiwari, S. N.: Coupled Laminar and Turbulent Flow Solutions for Jovian Entry. AIAA Progress Series in Astronautics and Aeronautics, Aerothermodynamics and Planetary Entry, Volume 77, edited by A. L. Crosbie, 1981, p. 351-373.
(Avail: AIAA Subject Category 34 RTOP 506-51-23)
1213. Lee, Ja H.; and Weaver, W. R.: A Solar Simulator-Pumped Atomic Iodine Laser. Applied Physics Letters, Volume 39, Number 2, July 15, 1981, p. 137-139.
(Avail: AIP Subject Category 36 RTOP 506-55-13)
1214. Outlaw, R. A.; Peterson, D. T.; and Schmidt, F. A.: Hydrogen Partitioning in Pure Cast Aluminum as Determined by Dynamic Evolution Rate Measurements. Metallurgical Transactions-A, Volume 12A, October 1981, p. 1809-1816.
(Avail: American Society for Metals Subject Category 26
RTOP 179-30-23)
1215. Reichman, Benjamin; and Byvik, Charles E.: Photoproduction of I_2 , Br_2 , and Cl_2 on n-Semiconducting Powder. Journal of Physical Chemistry, Volume 85, Number 15, July 1981, p. 2255-2258.
(Avail: ACS Subject Category 44 RTOP 506-55-13)
1216. Reichman, Benjamin; and Byvik, Charles E.: Photovoltage Response to Temperature Change at Oxide Semiconductor Electrodes. Journal of the Electrochemical Society, Volume 128, Number 12, December 1981, p. 2601-2603.
(Avail: Electrochemical Society Subject Category 44 RTOP 506-55-13)

1217. Weilmuenster, Kenneth J.; and Graves, Randolph A., Jr.: Viscous Flowfield Solutions About a Finite Parabolic Body. AIAA Journal, Volume 19, Number 9, September 1981, p. 1089-1090.
(Avail: AIAA Subject Category 34 RTOP 506-51-13)
1218. Wilson, J. W.; and Kamaratos, E.: Mean Excitation Energy for Molecules of Hydrogen and Carbon. Physics Letters A, Volume 85A, Number 1, September 1981, p. 27-29.
(Avail: North-Holland Publishing Co. Subject Category 72 RTOP 506-53-23)
1219. Wilson, J. W.: Solar Radiation Monitoring for High Altitude Aircraft. Journal of Health Physics, Volume 41, Number 4, October 1981, p. 607-617.
(Avail: Pergamon Press Subject Category 52 RTOP 199-20-76)
1220. Wilson, J. W.; and Townsend, L. W.: An Optical Model for Composite Nuclear Scattering. Canadian Journal of Physics, Volume 59, Number 11, November 1981, p. 1569-1576.
(Avail: University of Toronto Press Subject Category 73 RTOP 199-20-76)
1221. Wilson, John W.; and Khandelwal, Govind A.: Response of Large Cavity Ion Chambers to Space Protons. Nuclear Technology, Volume 52, January 1981, p. 129-133.
(Avail: American Nuclear Society, Inc. Subject Category 73 RTOP 199-20-76)
1222. Zoby, E. V.; Moss, J. N.; and Sutton, K.: Approximate Convective-Heating Equations for Hypersonic Flows. Journal of Spacecraft and Rockets, Volume 18, Number 1, January/February 1981, p. 64-70.
(Avail: AIAA Subject Category 34 RTOP 506-26-23)
1223. Zoby, E. V.; and Moss, J. N.: Preliminary Aerothermal Analysis for Saturn Entry. AIAA Progress Series in Astronautics and Aeronautics, Aerothermodynamics and Planetary Entry, Volume 77, edited by A. L. Crosbie, 1981, p. 374-395.
(Avail: AIAA Subject Category 34 RTOP 506-26-23)

Meeting/Conference Papers

1224. Armaly, Bassem F.; and Sutton, Kenneth: Thermal Conductivity of Partially Ionized Gas Mixtures. Presented at the AIAA 16th Thermophysics Conference, June 23-25, 1981, Palo Alto, California. AIAA Paper No. 81-1174.
(Avail: AIAA Subject Category 34 RTOP 506-51-23)
1225. Ashby, George C., Jr.; and Weinstein, Leonard M.: Hot-Film Static-Pressure Probe for Surveying Flow Fields. Presented at the Instrument Society of America's 27th International Instrumentation Symposium, April 27-30, 1981, Indianapolis, Indiana.
(Avail: ISA, Proceedings Subject Category 34 RTOP 506-51-13)

1226. Bradley, P. F.; Siemers, P. M., III; and Pruett, C. D.: Comparison of Forward Fuselage Space Shuttle Orbiter Flight Pressure Data to Wind Tunnel and Analytical Results in the Hypersonic Mach Number Range. Presented at the AIAA/SETP/SFTE/SAE 1st Flight Testing Conference, November 11-13, 1981, Las Vegas, Nevada. AIAA Paper No. 81-2477.
(Avail: AIAA Subject Category 18 RTOP 506-51-33)
1227. Buoncristiani, A. M.; Byvik, C. E.; and Smith, B. T.: Thermodynamic Limits to the Efficiency of Solar Energy Conversion by Quantum Devices. Presented at the 4th Miami International Conference on Alternative Energy Sources, December 14-16, 1981, Miami Beach, Florida.
(Avail: Clean Energy Research Institute of the University of Miami Subject Category 44 RTOP 506-55-13)
1228. Byvik, C. E.; Buoncristiani, A. M.; and Smith, B. T.: Thermodynamic Limits for Solar Energy Conversion by a Quantum-Thermal Hybrid System. Presented at the 4th Miami International Conference on Alternative Energy Sources, December 14-16, 1981, Miami Beach, Florida.
(Avail: Clean Energy Research Institute of the University of Miami Subject Category 44 RTOP 506-55-13)
1229. Byvik, Charles E.; and Reichman, Benjamin: A Measurement Technique of the Determination of the Point of Zero Zeta Potential (PZZP) of Single Crystal Semiconductor Electrodes for Photoelectrochemical Cells. Presented at the Fall Meeting of the Electrochemical Society--Photoelectrochemical Solar Cells Symposium, October 11-16, 1981, Denver, Colorado.
(Avail: Electrochemical Society, Proceedings Subject Category 44 RTOP 506-55-13)
1230. Conway, E. J.; Walker, G. H.; and Heinbockel, J. H.: A Thermochemical Model of Radiation Damage and Annealing Applied to GaAs Solar Cells. Presented at the 15th IEEE Photovoltaic Specialists Conference, May 12-15, 1981, Kissimmee, Florida.
(Avail: IEEE, Proceedings Subject Category 48 RTOP 506-55-43)
1231. Compton, Harold R.; Findlay, John T.; Kelly, George M.; and Heck, Michael L.: Shuttle (STS-1) Entry Trajectory Reconstruction. Presented at the AIAA/SETP/SFTE/SAE 1st Flight Testing Conference, November 11-13, 1981, Las Vegas, Nevada. AIAA Paper No. 81-2459.
(Avail: AIAA Subject Category 13 RTOP 506-51-33)
1232. Davis, E. E.; and Rehder, J. J.: An Integrated Transportation and Operations Comparison of Space- and Ground-Based OTV's. Presented at the AIAA/SAE/ASME 17th Joint Propulsion Conference, July 27-29, 1981, Colorado Springs, Colorado.
(Avail: AIAA Subject Category 16 RTOP 506-63-23)
1233. DeYoung, R. J.: Advances in NASA Research on Nuclear-Pumped Lasers. Presented at the 4th International Conference on Lasers and Applications, December 14-18, 1981, New Orleans, Louisiana.
(Avail: Lasers '81, Proceedings (Pending) Subject Category 36 RTOP 506-55-13)

1234. Eide, D. G.; Wurster, K. E.; Helms, V. T.; and Ashby, G. C.: Anatomy of an Entry Vehicle Experiment. Presented at the AIAA/SETP/SFTE/SAE 1st Flight Testing Conference, November 11-13, 1981, Las Vegas Nevada. AIAA Paper No. 81-2360.
(Avail: AIAA Subject Category 18 RTOP 506-51-13)
1235. Friesen, W. J.; Walker, G. H.; and Conway, E. J.: Thermal Stability of GaAs Heteroface Solar Cells With Differing Contact Materials. Presented at the ASME/AIAA/ACS/AIChE/ANS/IEEE/SAE 16th Intersociety Energy Conversion Engineering Conference, August 9-14, 1981, Atlanta, Georgia. Paper No. 819224.
(Avail: ASME, Proceedings Subject Category 44 RTOP 506-55-43)
1236. Garrett, L. Bernard: Interactive Design and Analysis of Future Large Spacecraft Concepts. Presented at the AIAA 16th Thermophysics Conference, June 23-25, 1981, Palo Alto, California. AIAA Paper No. 81-1177.
(Avail: AIAA Subject Category 18 RTOP 540-02-13)
1237. Garrett, L. Bernard: Interactive Modeling, Design and Analysis of Large Spacecraft. Presented at the Symposium on "Computational Aspects of Heat Transfer in Structures," November 3-5, 1981, Hampton, Virginia.
(Avail: NTIS, NASA CP-2216 (Pending) Subject Category 34 RTOP 540-02-13)
1238. Goslee, J. W.: Progress Report on the Electrostatic Membrane Antenna Concept Testing. Presented at the Third Annual Large Space Systems Technology Review, November 16-19, 1981, Hampton, Virginia.
(Avail: NTIS, NASA CP-2215 Subject Category 17 RTOP 506-62-43)
1239. Goslee, J. W.; and Mihora, D. J.: Test Progress on the Electrostatic Membrane Reflector. Presented at the Eighteenth Space Congress, April 29-May 1, 1981, Kennedy Space Center, Florida.
(Avail: Kennedy Space Flight Center, Proceedings Subject Category 32 RTOP 506-62-43)
1240. Grenich, A. F.; and Woods, W. C.: Flow Field Investigation of Atmospheric Braking for High Drag Vehicles With Forward Facing Jets. Presented at the AIAA 19th Aerospace Sciences Meeting, January 12-15, 1981, St. Louis, Missouri. AIAA Paper No. 81-0293.
(Avail: AIAA Subject Category 34 RTOP 506-51-13)
1241. Helms, Vernon T., III: An Empirical Method for Computing Leaside Centerline Heating on the Space Shuttle Orbiter. Presented at the AIAA 16th Thermophysics Conference, June 23-25, 1981, Palo Alto, California. AIAA Paper No. 81-1043.
(Avail: AIAA Subject Category 34 RTOP 506-51-33)
1242. Holloway, P. H.; and Outlaw, R. A.: Temperature Effects on NiO Growth and Dissolution on Ni(110). Presented at the American Vacuum Society National Symposium, November 2-6, 1981, Anaheim, California.
(Avail: AVS Subject Category 26 RTOP 506-55-43)

1243. Jones, Jim J.: OEX - Use of the Shuttle Orbiter as a Research Vehicle. Presented at the AIAA/SETP/SFTE/SAE 1st Flight Testing Conference, November 11-13, 1981, Las Vegas, Nevada. AIAA Paper No. 81-2512. (Avail: AIAA Subject Category 18 RTOP 506-51-33)
1244. Kamaratos, E.; Wilson, J. W.; Chang, C. K.; and Xu, Y. J.: Basic Physical and Chemical Processes in Space Radiation Effects on Polymers. Presented at the Third Annual Large Space Systems Technology Review, November 16-19, 1981, Hampton, Virginia. (Avail: NTIS, NASA CP-2215 Subject Category 73 RTOP 506-53-23)
1245. Lee, J. H.; and Weaver, W. R.: Solar-Pumped Gas Laser. Presented at the Conference on Lasers and Electro-Optics (CLEO '81), June 10-12, 1981, Washington, D.C. CLEO Technical Digest. (Avail: OSA Subject Category 36 RTOP 506-55-13)
1246. MacConochie, Ian O.; LeMessunier, R. W.; and Brien, E. P.: Technology Needs and Applications for Composites on Earth-to-Orbit Transports. Presented at the American Ceramic Society 5th Annual Conference on Composites and Advanced Materials, January 18-22, 1981, Cocoa Beach, Florida. (Avail: ACS, Proceedings Subject Category 16 RTOP 506-51-13)
1247. MacConochie, Ian O.; Rehder, John J.; Price, Howard L.; and Campbell, Thomas G.: A Towing Concept for Orbital Transfer of Large Space Structures. Presented at the SAWE Fortieth Annual Conference on Mass Properties Engineering, May 4-7, 1981, Dayton, Ohio. SAWE Paper No. 1442. (Avail: SAWE, Proceedings Subject Category 16 RTOP 506-51-13)
1248. Martin, James A.: Comparisons of Advanced Hydrocarbon Rocket Engines for Earth-to-Orbit Vehicles. Presented at the AIAA/SAE/ASME 17th Joint Propulsion Conference, July 27-29, 1981, Colorado Springs, Colorado. AIAA Paper No. 81-1371. (Avail: AIAA Subject Category 15 RTOP 540-03-13)
1249. Melfi, Leonard T., Jr.; Hueser, J. E.; and Brock, F. J.: Direct Simulation Monte Carlo Technique for Modeling of the Environment in the Vicinity of the Space Shuttle Orbiter. Presented at the Society of Photo-Optical Instrumentation Engineers Technical Symposium East '81, April 20-24, 1981, Washington, D.C. SPIE Paper No. 287-10. (Avail: SPIE, Proceedings Subject Category 16 RTOP 906-75-26)
1250. Moss, J. N.; and Kumar, A.: Significance of Turbulence and Transition Location on Radiative Heating With Ablation Injection. Presented at the AIAA 19th Aerospace Sciences Meeting, January 12-15, 1981, St. Louis, Missouri. AIAA Paper No. 81-0281. (Avail: AIAA Subject Category 34 RTOP 506-51-23)
1251. Powell, Richard W.; and Freeman, Delma C., Jr.: Application of a Tip-Fin Controller to the Shuttle Orbiter for Improved Yaw Control. Presented at the AIAA 19th Aerospace Sciences Meeting, January 12-15, 1981, St. Louis, Missouri. AIAA Paper No. 81-0074. (Avail: AIAA Subject Category 18 RTOP 506-15-13)

1252. Price, Joseph M.; and Blanchard, Robert C.: Determination of Atmospheric Properties for STS-1 Aerothermodynamic Investigations. Presented at the AIAA/SETP/SFTE/SAE 1st Flight Testing Conference, November 11-13, 1981, Las Vegas, Nevada. AIAA Paper No. 81-2430.
(Avail: AIAA Subject Category 18 RTOP 506-51-33)
1253. Shinn, Judy L.: Optical Absorption of Carbon and Hydrocarbon Species From Shock Heated Acetylene and Methane in the 135-220 NM Wavelength Range. Presented at the AIAA 16th Thermophysics Conference, June 23-25, 1981, Palo Alto, California. AIAA Paper No. 81-1189.
(Avail: AIAA Subject Category 34 RTOP 506-51-23)
1254. Throckmorton, David A.: Research Analysis of Space Shuttle Orbiter Entry Aerothermodynamic Flight Data at the NASA Langley Research Center. Presented at the AIAA/SETP/SFTE/SAE 1st Flight Testing Conference, November 11-13, 1981, Las Vegas, Nevada. AIAA Paper No. 81-2429.
(Avail: AIAA Subject Category 18 RTOP 506-51-33)
1255. Tiwari, S. N.; Chow, H.; and Moss, J. N.: Analysis of Aerothermodynamic Environment of a Titan Aerocapture Vehicle. Presented at the AIAA 16th Thermophysics Conference, June 23-25, 1981, Palo Alto, California. AIAA Paper No. 81-1128.
(Avail: AIAA Subject Category 47 RTOP 506-51-23)
1256. Townsend, L. W.: An Optical Model Approach to Abrasion-Ablation. Presented at the 5th High Energy Heavy Ion Study, May 18-22, 1981, Berkeley, California.
(Avail: Lawrence Berkeley Lab., Proceedings Subject Category 73 RTOP 199-20-76)
1257. Walberg, Gerald D.: Aerodynamic Enhancement of Space Transportation Systems. Presented at the 32nd International Astronautical Federation (IAF) Congress, September 6-12, 1981, Rome, Italy. Paper No. IAF-81-3.
(Avail: Pergamon Press, IAF Proceedings Subject Category 16 RTOP 540-03-13)
1258. Weaver, Willard R.; and Lee, Ja H.: A Solar Simulator-Pumped Gas Laser for the Direct Conversion of Solar Energy. Presented at the ASME/AIAA/ACS/AICChE/ANSI/SAE 16th Intersociety Energy Conversion Engineering Conference, August 9-14, 1981, Atlanta, Georgia. Paper No. 819050, Volume I, p. 84-88.
(Avail: ASME, Proceedings Subject Category 36 RTOP 506-55-13)
1259. Weilmuenster, K. James; and Hamilton, H. Harris, II: A Method for Computation of Inviscid Three-Dimensional Flow Over Blunt Bodies Having Large Embedded Subsonic Regions. Presented at the AIAA 14th Fluid and Plasma Dynamics Conference, June 23-25, 1981, Palo Alto, California. AIAA Paper No. 81-1203.
(Avail: AIAA Subject Category 02 RTOP 506-51-13)
1260. Wilhite, Alan W.: The Aerospace Vehicle Interactive Design System. Presented at the AIAA 19th Aerospace Sciences Meeting, January 12-15, 1981, St. Louis, Missouri. AIAA Paper No. 81-0233.
(Avail: AIAA Subject Category 71 RTOP 506-51-13)

1261. Wilson, J. W.: Solar-Pumped Gas Laser Development. Presented at the AIAA 19th Aerospace Sciences Meeting, January 12-15, 1981, St. Louis, Missouri. AIAA Paper No. 81-0098.
(Avail: AIAA Subject Category 36 RTOP 506-55-13)
1262. Wurster, K. E.: An Assessment of the Impact of Transition on Advanced Winged Entry Vehicle Thermal Protection System Mass. Presented at the AIAA 16th Thermophysics Conference, June 23-25, 1981, Palo Alto, California. AIAA Paper No. 81-1090.
(Avail: AIAA Subject Category 15 RTOP 506-51-13)
1263. Zoby, E. V.: Approximate Heating Analysis for the Windward-Symmetry Plane of Shuttle-Like Bodies at Large Angle of Attack. Presented at the AIAA 16th Thermophysics Conference, June 23-25, 1981, Palo Alto, California. AIAA Paper No. 81-1042.
(Avail: AIAA Subject Category 34 RTOP 506-51-23)
1264. Zoby, E. V.; and Moss, J. N.: Thermodynamic Equilibrium-Air Correlations for Flowfield Applications. Presented at the AIAA 19th Aerospace Sciences Meeting, January 12-15, 1981, St. Louis, Missouri. AIAA Paper No. 81-0280.
(Avail: AIAA Subject Category 34 RTOP 506-51-23)

Computer Programs

No computer programs.

Tech Briefs

1265. Byvik, Charles E. (Langley Research Center); and Reichman, Benjamin (Christopher Newport College): Photoproduction of Halogens Using Platinized TiO_2 . NASA Tech Brief LAR-12713. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Materials)
1266. MacConochie, Ian O.; and Beswick, Alfred G.: Tire Temperature and Pressure Monitor. NASA Tech Brief LAR-19262. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)
1267. Milnes, A. G.; and Flat, A. (Carnegie-Mellon University): Multilayer Front-Contact Grid for Solar Cells. NASA Tech Brief LAR-12613. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Electronic Components and Circuits)
1268. Totah, Raymond S. (Rockwell International Corp.): Integrated Structural and Cable Connector. NASA Tech Brief LAR-12769. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Machinery)

Patents

1269. DeYoung, Russell J.; and Hohl, Frank: Large Volume Multiple Path Nuclear Pumped Laser. U.S. Patent 4,300,106. Issued 1981.
(Avail: U.S. Patent & Trademark Office Subject Category 15)

1270. Jackson, Liam R.; Weidner, John P.; Small, William J.; and Martin, James A.: Orbiter/Launch System. U.S. Patent 4,265,416. Issued 1981.
(Avail: U.S. Patent & Trademark Office Subject Category 15)

Oral Presentations to Conferences/Workshops

1271. Byvik, Charles: Solar Energy Conversion. Presented at the Tidewater Chapter Meeting of the IEEE, April 21, 1981, Norfolk, Virginia.
1272. Compton, Harold R.: Shuttle Flight Data Analysis. Presented at the AIAA 8th Atmospheric Flight Mechanics Conference, August 19-21, 1981, Albuquerque, New Mexico.
1273. DeRyder, L. J.: Interactive Computer-Aided Spacecraft Design and Analysis. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
1274. Jalufka, N. W.: Direct Nuclear-Pumped $^2\text{He-Xe}$ Laser at 2.63. Presented at the 1981 IEEE International Conference on Plasma Science, May 18-20, 1981, Santa Fe, New Mexico.
1275. Outlaw, R. A.: Real Time Desorption Measurements of Hydrogen in Aluminum. Presented at the Conference on Environmental Degradation of Engineering Materials, September 21-23, 1981, Blacksburg, Virginia. Abstract published in Proceedings of Second International Conference on Environmental Degradation of Engineering Materials, pp. 497-498. Library of Congress Catalog Card Number 81-83144.
1276. Reichman, Benjamin; and Byvik, C. E.: Photoproduction of Cl_2 , Br_2 , and I_2 on n-Semiconductor Powder. Presented at the 159th Meeting of the Electro-Chemical Society, May 10-15, 1981, Minneapolis, Minnesota.
1277. Stevens, Dariene: Interactive Graphics Techniques for Creating Analysis Models for Spacecraft Computer-Aided Design and Analysis. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
1278. Thomas, Carolyn: Color Graphics Applications for Spacecraft Computer-Aided Design and Analysis. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
1279. Tiwari, S. N.; Chow, H.; and Moss, J. N.: Analysis of Aerothermodynamic Environment of a Titan Aerocapture Vehicle. Presented at the 1981 Annual Meeting of the Virginia Academy of Science, May 12-15, 1981, Norfolk, Virginia.
1280. Townsend, L. W.: Projectile-Ion Fragmentation by Abrasion: An Optical Model Approach. Presented at the Spring 1981 Meeting of the American Physical Society, April 20-23, 1981, Baltimore, Maryland. Abstract published in Bulletin of American Physical Society, Volume 26, Number 4, April 1981, p. 596.

1281. Townsend, L. W.: Relativistic Heavy-Ion Fragmentation by Abrasion: Delta-Function Interaction. Presented at the 1981 Annual Meeting of the Virginia Academy of Science, May 12-15, 1981, Norfolk, Virginia.
1282. Walberg, Gerald D.: High-Power Space-Based Lasers for Future NASA Missions. Presented at the Hampton Roads Section of AIAA, October 21, 1981, Hampton, Virginia.
1283. Wilhite, Alan; and Crisp, Vicki: The AVID Relational Information System. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
1284. Wilhite, Alan; and Rehder, Joe: AVID: A Design System for Technology Studies of Advanced Transportation Concepts. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
1285. Youngblood, James W.: High Altitude, Solar Powered Platform. Presented at the 1981 Annual Meeting of the Virginia Academy of Science, May 12-15, 1981, Suffolk, Virginia.

PUBLICATIONS FOR MARINE AND APPLICATIONS TECHNOLOGY DIVISION

Formal Reports

1286. Brooks, David R.: Grid Systems for Earth Radiation Budget Experiment Applications. NASA TM-83233, December 1981, 40 p.
(Avail: NTIS Subject Category 61 RTOP 619-12-30)
1287. Brown, Clarence A., Jr.; Jarrett, Olin, Jr.; and Farmer, Franklin H.: Laboratory Tank Studies of Single Species of Phytoplankton Using a Remote Sensing Fluorosensor. NASA TP-1821, April 1981, 75 p.
(Avail: NTIS Subject Category 43 RTOP 146-40-15)
1288. Campbell, Janet W. (editor): Ozone Trend Detectability. NASA CP-2189, July 1981, 110 p.
(Avail: NTIS Subject Category 46 RTOP 147-30-01)
1289. Campbell, Janet W.; and Thomas, James P. (editors): Chesapeake Bay Plume Study - Superflux 1980. NASA CP-2188, NOAA/NEMP III 81 ABCDFG 0042, October 1981, 522 p.
(Avail: NTIS Subject Category 48 RTOP 146-40-15)
1290. Cofer, Wesley R., III; Purgold, Gerald C.; and Gregory, Gerald L.: Summary of Measurement Results of Ozone, Methane, and Nonmethane Hydrocarbons for C-54 Aircraft: 1979 Southeastern Virginia Urban Plume Study. NASA TM-83142, August 1981, 58 p.
(Avail: NTIS Subject Category 45 RTOP 145-20-10)
1291. Maddrea, G. L., Jr.; and Bendura, R. J.: NASA Participation in the 1980 Persistent Elevated Pollution Episode/Northeast Regional Oxidant Study (PEPE/NEROS) Project: Operational Aspects. NASA TM-83170, September 1981, 135 p.
(Avail: NTIS Subject Category 45 RTOP 146-20-10)
1292. Pellett, G. L.: Analytic Model for Washout of HCl(g) From Dispersing Rocket Exhaust Clouds. NASA TP-1801, May 1981, 90 p.
(Avail: NTIS Subject Category 45 RTOP 506-52-33)
1293. Pellett, G. L.; and Staton, W. L.: Application of a Gaussian Multilayer Diffusion Model To Characterize Dispersion of Vertical HCl Column Density in Rocket Exhaust Clouds. NASA TP-1956, December 1981, 73 p.
(Avail: NTIS Subject Category 45 RTOP 989-15-20)
1294. Witte, William G.; Whitlock, Charles H.; Usry, J. W.; Morris, W. Douglas; and Gurganus, E. A.: Laboratory Measurements of Physical, Chemical, and Optical Characteristics of Lake Chicot Sediment Waters. NASA TP-1941, December 1981, 28 p.
(Avail: NTIS Subject Category 43 RTOP 691-09-02)

Quick-Release Technical Memorandums

1295. Gregory, Gerald L.; Beck, Sherwin M.; and Mathis, Joe J., Jr.: In Situ Correlative Measurements for the Ultraviolet Differential Absorption Lidar and the High Spectral Resolution Lidar Air-Quality Remote Sensors: 1980 PEPE/NEROS Program. NASA TM-83107, April 1981, 60 p.
(Avail: NTIS Subject Category 45 RTOP 146-20-10)
1296. Gregory, Gerald L.; Lee, Robert B.; and Mathis, Joe J., Jr.: 1979 Southeastern Virginia Urban Plume Study, Volume I: Description of Experiments and Selected Aircraft Data. NASA TM-81860-1, February 1981, 70 p.
(Avail: NTIS Subject Category 45 RTOP 146-20-10)
1297. Gregory, Gerald L.; Lee, Robert B.; and Mathis, Joe J., Jr.: 1979 Southeastern Virginia Urban Plume Study, Volume II: Data Listings for NASA Cessna Aircraft. NASA TM-81860-2, February 1981, 199 p.
(Avail: NTIS Subject Category 45 RTOP 146-20-10)
1298. Morris, W. Douglas; Usry, J. W.; Witte, William G.; Whitlock, Charles H.; and Gurganus, E. A.: A Comparison of Observed and Analytically Derived Remote-Sensing Penetration Depths for Turbid Water. NASA TM-83176, September 1981, 22 p.
(Avail: NTIS Subject Category 43 RTOP 691-09-02)
1299. Talay, T. A.; and Poole, L. R.: Spectral Atmospheric Observations at Nantucket Island, May 7-14, 1981. NASA TM-83196, November 1981, 55 p.
(Avail: NTIS Subject Category 43 RTOP 146-40-15)
1300. Usry, J. W.; and Whitlock, C. H.: Calibration of a Turbidity Meter for Making Estimates of Total Suspended Solids Concentrations and Beam Attenuation Coefficients in Field Experiments. NASA TM-81873, October 1981, 16 p.
(Avail: NTIS Subject Category 45 RTOP 691-09-02)
1301. Usry, J. W.; Whitlock, C. H.; Poole, L. R.; and Witte, W. G., Jr.: Laboratory Measurements of Selected Optical, Physical, Chemical, and Remote-Sensing Properties of Five Water Mixtures Containing Calvert Clay and a Nonfluorescing Dye. NASA TM-81896, January 1981, 40 p.
(Avail: NTIS Subject Category 45 RTOP 146-40-15)
1302. Wallace, John W.; Lovelady, Ray W.; and Ferguson, Robert L.: Design, Development, and Field Demonstration of a Remote Deployable Water Quality Monitoring System. NASA TM-83152, July 1981, 95 p.
(Avail: NTIS Subject Category 35 RTOP 146-40-15)

Contractor Reports

1303. Bice, Karen L.; and Clement, Stephen C.: Mineralogical, Optical, Geochemical and Particle Size Properties of Four Sediment Samples for Optical Physics Research. (NAS1-16042 College of William and Mary.) NASA CR-165663, February 1981, 21 p.
(Avail: NTIS Subject Category 45 RTOP 691-09-02)

1304. Bice, Karen L.; and Clement, Stephen C.: Mineralogical, Optical, and Geochemical Properties of John H. Kerr Reservoir and Lake Chicot Sediment Samples for AgRISTARS Pollution Research. (NAS1-16042 The College of William and Mary.) NASA CR-165761, August 1981, 16 p.
(Avail: NTIS Subject Category 45 RTOP 691-09-02)
1305. Bice, Karen L.; and Clement, Stephen C.: Mineralogical, Optical, and Geochemical Properties of John H. Kerr Reservoir Sediment Samples for AgRISTARS Pollution Research. (NAS1-16042 The College of William and Mary.) NASA CR-165762, August 1981, 17 p.
(Avail: NTIS Subject Category 45 RTOP 691-09-02)
1306. Bowley, Clinton J.; Burke, Hsiao-hua; and Barnes, James C.: Analysis of GOES Imagery and Digitized Data for the SEV-UPS Period, August 1979. (NAS1-16108 Environmental Research and Technology, Inc.) NASA CR-165656, February 1981, 32 p.
(Avail: NTIS Subject Category 45 RTOP 146-20-01)
1307. Griggs, M.: Satellite Measurements of Tropospheric Aerosols. (NAS1-15898 Science Applications, Inc.) NASA CR-3459, August 1981, 63 p.
(Avail: NTIS Subject Category 45 RTOP 146-20-10)
1308. LeCroy, Stuart R.: Determination of Circulation and Turbidity Patterns in Kerr Lake From Landsat MSS Imagery. (NAS1-16000 Kentron International, Inc.) NASA CR-165830, November 1981, 40 p.
(Avail: NTIS Subject Category 45 RTOP 691-09-02)
1309. Saeger, M. L.; Eaton, W. C.; Wright, R. S.; White, J. H.; and Tommerdahl, J. B.: In Situ Sensors for Measurements in the Global Troposphere. (NAS1-15827 Research Triangle Institute.) NASA CR-3465, September 1981, 273 p.
(Avail: NTIS Subject Category 45 RTOP 146-20-10)
1310. Tanis, Fred J.; and Lyzenga, David R.: Verification of Reflectance Models in Turbid Waters. (NAS1-15512 Environmental Research Institute of Michigan.) NASA CR-165741, April 1981, 70 p.
(Avail: NTIS Subject Category 43 RTOP 146-40-15)
1311. White, J. H.; Strong, R. B.; Saeger, M. L.; Eaton, W. C.; and Tommerdahl, J. B.: Data Quality - 1979 Southeastern Virginia Urban Plume Study (SEV-UPS): Surface and Airborne Studies. (NAS1-15827 Research Triangle Institute.) NASA CR-3450, July 1981, 66 p.
(Avail: NTIS Subject Category 45 RTOP 146-20-10)

Journal Articles and Periodical Literature

1312. Bartlett, David S.; and Klemas, Vytautus: In Situ Spectral Reflectance Studies of Tidal Wetland Grasses. Photogrammetric Engineering and Remote Sensing, Volume 47, Number 12, December 81, p. 1695-1703.
(Avail: American Society of Photogrammetry Subject Category 45 RTOP 307-01-02)

1313. Bowman, Malcolm J.; and Esaias, Wayne E.: Fronts, Stratification, and Mixing in Long Island and Block Island Sounds. Journal of Geophysical Research, Volume 86, Number C5, May 20, 1981, p. 4260-4264.
(Avail: AGU Subject Category 45 RTOP 146-40-15)
1314. Cofer, W. R., III; and Purgold, G. C.: Automated Analyzer for Aircraft Measurements of Atmospheric Methane and Total Hydrocarbons. Review of Scientific Instruments, Volume 52, Number 10, October 1981, p. 1560-1564.
(Avail: AIP Subject Category 45 RTOP 146-20-10)
1315. Cofer, W. R., III; Schryer, D. R.; and Rogowski, R. S.: The Oxidation of SO₂ on Carbon Particles in the Presence of O₃, NO₂, and N₂O. Atmospheric Environment, Volume 15, Number 7, 1981, p. 1281-1286.
(Avail: Pergamon Press Ltd. Subject Category 45 RTOP 146-20-10)
1316. Esaias, Wayne E.: Remote Sensing in Biological Oceanography. Oceanus, Volume 24, Number 3, Fall 1981, p. 32-38.
(Avail: Woods Hole Oceanographic Institute Subject Category 48 RTOP 146-40-15)
1317. Harrison, Edwin F.; and Gibson, Gary G.: Orbital Analysis for the Upper Atmosphere Research Satellite Missions. Journal of Spacecraft and Rockets, Volume 18, Number 2, March/April 1981, p. 138-140.
(Avail: AIAA Subject Category 46 RTOP 146-20-14)
1318. Harriss, Robert C.; and Sebach, Daniel I.: Methane Flux in Forested Freshwater Swamps of the Southeastern United States. Geophysical Research Letters, Volume 8, Number 9, September 1981, p. 1002-1004.
(Avail: AGU Subject Category 43 RTOP 199-30-36)
1319. Johnson, Robert W.; Bahn, Gilbert S.; and Thomas, James P.: Synoptic Thermal and Oceanographic Parameter Distributions in the New York Bight Apex on June 23, 1977. Photogrammetric Engineering and Remote Sensing, Volume 48, Number 11, November 1981, p. 1593-1598.
(Avail: American Society of Photogrammetry Subject Category 45 RTOP 677-22-24)
1320. Johnson, Robert W.; and Ohlhorst, Craig W.: Application of Remote Sensing to Monitoring and Studying Dispersion in Ocean Dumping. Ocean Dumping of Industrial Waste, edited by Bostwick H. Ketchum, Dana R. Kester, and P. Kilho Park, 1981, p. 175-191.
(Avail: Plenum Pub. Corp., Subject Category 45 RTOP 146-30-34)
1321. Lindberg, Steven E.; and Harriss, Robert C.: The Role of Atmospheric Deposition in an Eastern U.S. Deciduous Forest. Water, Air, and Soil Pollution, Volume 16, 1981, p. 13-31.
(Avail: D. Reidel Publishing Company Subject Category 45 RTOP 199-30-36)
1322. Ohlhorst, Craig W.: The Use of Landsat to Monitor Deep Water Dumpsite 106. Journal of Environmental Monitoring and Assessment 1, 1981, p. 143-153.
(Avail: D. Reidel Publishing Company Subject Category 45 RTOP 146-40-15)

1323. Poole, L. R.; Venable, D. D.; and Campbell, J. W.: Semianalytic Monte Carlo Radiative Transfer Model for Oceanographic LIDAR Systems. Applied Optics, Volume 20, Number 20, October 15, 1981, p. 3653-3656.
(Avail: OSA Subject Category 48 RTOP 146-40-15)
1324. Shumate, M. S.; Menzies, R. T.; Grant, W. B.; and McDougal, D. S.: Laser Absorption Spectrometer: Remote Measurement of Tropospheric Ozone. Applied Optics, Volume 20, Number 4, February 15, 1981, p. 545-552.
(Avail: OSA Subject Category 85 RTOP 146-20-10)
1325. Whitlock, C. H.; Poole, L. R.; Usry, J. W.; Houghton, W. M.; Witte, W. G.; Morris, W. D.; and Gurganus, E. A.: Comparison of Reflectance With Backscatter and Absorption Parameters for Turbid Waters. Applied Optics, Volume 20, Number 3, February 1, 1981, p. 517-522.
(Avail: OSA Subject Category 45 RTOP 146-40-45)

Meeting/Conference Papers

1326. Bowker, David E.; Hardesty, C. A.; Jobson, D. J.; and Bahn, G. S.: Analysis of Testbed Airborne Multispectral Scanner (TBAMS) Data from Superflux II. Presented at the Joint NOAA/NASA Symposium on Results of 1980 Chesapeake Bay Plume Study, January 21-23, 1981, Williamsburg, Virginia.
(Avail: NTIS, NASA CP-2188 Subject Category 48 RTOP 146-40-15)
1327. Campbell, Janet W.: Assessment of Superflux Relative to Remote-Sensing Science. Presented at the Joint NOAA/NASA Symposium on Results of 1980 Chesapeake Bay Plume Study, January 21-23, 1981, Williamsburg, Virginia.
(Avail: NTIS, NASA CP-2188 Subject Category 48 RTOP 146-40-15)
1328. Campbell, Janet, W.: Potential Role of Remote Sensing in Study of Estuarine Plumes and Related Ecosystems. Presented at the NASA Workshop on Global Ecology, July 13-24, 1981, Santa Barbara, California.
(Avail: University of California, Proceedings Subject Category 48 RTOP 146-40-15)
1329. Campbell, Janet W.; Esaias, Wayne E.; and Hypes, Warren D.: Superflux I, II and III Experiment Designs: Remote Sensing Aspects. Presented at the Joint NOAA/NASA Symposium on Results of 1980 Chesapeake Bay Plume Study, January 21-23, 1981, Williamsburg, Virginia.
(Avail: NTIS, NASA CP-2188 Subject Category 48 RTOP 146-40-15)
1330. Esaias, Wayne E.: Assessment of Superflux Relative to Marine Science and Oceanography. Presented at the Joint NOAA/NASA Symposium on Results of 1980 Chesapeake Bay Plume Study, January 21-23, 1981, Williamsburg, Virginia.
(Avail: NTIS, NASA CP-2188 Subject Category 48 RTOP 146-40-15)
1331. Esaias, Wayne E.: Investigation of Dynamics of Highly Variable Marine Ecosystems. Presented at the NASA Workshop on Global Ecology, July 13-24, 1981, Santa Barbara, California.
(Avail: University of California, Proceedings Subject Category 48 RTOP 146-40-15)

1332. Farmer, Franklin H.: Interpretation of an Index of Phytoplankton Population Composition Calculated From Remote Airborne Fluorosensor (RAF) Data. Presented at the Joint NOAA/NASA Symposium on Results of 1980 Chesapeake Bay Plume Study, January 21-23, 1981, Williamsburg, Virginia.
(Avail: NTIS, NASA CP-2188 Subject Category 48 RTOP 146-40-15)
1333. Jarrett, Olin, Jr.; Esaias, Wayne E.; and Brown, Clarence A., Jr.: Analysis of ALOPE Data from Superflux I and II. Presented at the Joint NOAA/NASA Symposium on Results of 1980 Chesapeake Bay Plume Study, January 21-23, 1981, Williamsburg, Virginia.
(Avail: NTIS, NASA CP-2188 Subject Category 48 RTOP 146-40-15)
1334. Minnis, Patrick; and Harrison, Edwin F.: Diurnal Variability of Regional Cloud Radiative Parameters From Geostationary Satellite Data. Presented at the American Meteorological Society Fourth Conference on Atmospheric Radiation, June 16-18, 1981, Toronto, Ontario, Canada.
(Avail: AMS, Proceedings Subject Category 42 RTOP 146-10-06)
1335. Ohlhorst, Craig: Analysis of Ocean Color Scanner (OCS) Data from Superflux III. Presented at the Joint NOAA/NASA Symposium on Results of 1980 Chesapeake Bay Plume Study, January 21-23, 1981, Williamsburg, Virginia.
(Avail: NTIS, NASA CP-2188 Subject Category 48 RTOP 146-40-13)
1336. Pellett, G. L.; Bendura, R. J.; and Storey, R. W.: Near-Field Deposition of Acidic Droplets from Titan III and Space Shuttle Launches. Presented at the JANNAF Safety and Environmental Protection Annual Meeting, November 17-19, 1981, Kennedy Space Center, Florida.
(Avail: CPIA, Proceedings Subject Category 45 RTOP 989-15-20)
1337. Sebacher, D. I.; Gregory, G. L.; Bendura, R. J.; Woods, D. C.; and Cofer, W. R.: Hydrogen Chloride and Particulate Measurements in the Space Shuttle Exhaust Cloud. Presented at the JANNAF Safety and Environmental Protection Annual Meeting, November 17-19, 1981, Kennedy Space Center, Florida.
(Avail: CPIA, Proceedings Subject Category 45 RTOP 989-15-20)
1338. Whitlock, Charles H.; Witte, William G.; Talay, Theodore A.; Morris, W. Douglas; Usry, Jimmy W.; and Poole, Lamont R.: Research for Reliable Quantification of Surface Sediment Concentrations From Multispectral Scanner Remote Sensing Data. Presented at the International Symposium on Rainfall-Runoff Modeling, May 18-21, 1981, Mississippi State University, Mississippi.
(Avail: Mississippi State University, Proceedings
Subject Category 45 RTOP 691-09-02)

Computer Programs

No computer programs.

Tech Briefs

1339. Wilkins, Judd R.; Grana, David C. (Langley Research Center); and Fox, Susan C. (Bionetics Corporation): Improved Microbe Detection in Water Samples. NASA Tech Brief LAR-12709. Released 1981.
(Avail: NASA Langley Technology Utilization Office
Category: Life Sciences)

Patents

1340. Purgold, Gerald C.: Automated Syringe Sampler. U.S. Patent 4,274,285. Issued 1981.
(Avail: U.S. Patent & Trademark Office Subject Category 45)
1341. Wilkins, Judd R.: Indirect Microbial Detection. U.S. Patent 4,264,728. Issued 1981.
(Avail: U.S. Patent & Trademark Office Subject Category 51)

Oral Presentations to Conferences/Workshops

1342. Harrison, Edwin F.; and Minnis, Patrick: Diurnal Variability of Regional Cloud Radiative Parameters From Geostationary Satellite Data. Presented at the International Satellite Cloud Climatology Project Workshop, August 29-September 2, 1981, Hamburg, Germany.

PUBLICATIONS FOR OFFICE OF DIRECTOR FOR SYSTEMS ENGINEERING AND OPERATIONS

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Periodical Literature

No journal articles and periodical literature.

Meeting/Conference Papers

No meeting/conference papers.

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

Oral Presentations to Conferences/Workshops

No oral presentations to conferences/workshops.

PUBLICATIONS FOR FACILITIES PROGRAM DEVELOPMENT OFFICE

Formal Reports

1343. Jensen, Ronald N.: Performance Evaluation of the Solar Building Test Facility. NASA TM-83127, August 1981, 25 p.
(Avail: NTIS Subject Category 44 RTOP 992-24-01)

Quick-Release Technical Memorandums

1344. Credeur, Karen R.: Comparisons of Some Large Scientific Computers 1964-1986. NASA TM-81928, October 1981, 37 p.
(Avail: NTIS Subject Category 62)
1345. Jensen, Ronald N.: Design of an Energy Conservation Building. NASA TM-83175, November 1981, 31 p.
(Avail: NTIS Subject Category 44 RTOP 992-24-01)

Contractor Reports

No contractor reports.

Journal Articles and Periodical Literature

No journal articles and periodical literature.

Meeting/Conference Papers

No meeting/conference papers.

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

1346. Taback, Israel: Small Conductive Particle Sensor. (NAS1-15238 The Bionetics Corp.) U.S. Patent 4,286,209. Issued 1981.
(Avail: U.S. Patent & Trademark Office Subject Category 24)

Oral Presentations to Conferences/Workshops

No oral presentations to conferences/workshops.

PUBLICATIONS FOR FABRICATION DIVISION

Formal Reports

1347. Buckley, John D. (editor): Metal Matrix Composites. NASA CP-2193, August 1981, 47 p.
(Avail: STIF Subject Category 24 RTOP 992-18-00)

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

1348. Akgerman, Nuri; and Billhardt, C. F.: AIRCL, A Programmed System for Generating NC Tapes for Airplane Models - User's Manual. (NAS1-15090 Battelle Columbus Laboratories.) NASA CR-165687, March 1981, 38 p.
(Avail: NTIS Subject Category 37 RTOP 992-18-01)

Journal Articles and Periodical Literature

1349. Buckley, John D.; Strouhal, George; and Gangler, James J.: Early Development of Ceramic Fiber Insulation for the Space Shuttle. Bulletin of the American Ceramic Society, Volume 60, Number 11, 1981, p. 1196-1199.
(Avail: American Chemical Society Subject Category 18
RTOP 506-89-01)

Meeting/Conference Papers

1350. Wigley, D. A.; Sandefur, P. G., Jr.; and Lawing, Pierce L.: Preliminary Results on the Development of Vacuum Brazed Joints for Cryogenic Wind Tunnel Aerofoil Models. Presented at the CEC/ICMC/NBS Conference on "Cryogenics - An Essential Foundation for Advanced Technology," August 10-14, 1981, San Diego, California.
(Avail: NBS Subject Category 26 RTOP 505-31-53)

Computer Programs

1351. Bowen, D. Gene; and Shrout, Barrett L. (Langley Research Center); Akgerman, Nuri; and Billhardt, Carl F. (Battelle Memorial Institute): AIRCL: A Programmed System for Generating Numerical Control Tapes for Airplane Models. Program No. LAR-12494. NASA Accession No. M80-10035. Released 1981.
(Avail: COSMIC Subject Category 02)

Tech Briefs

1352. Bryan, Charles F., Jr.; and Bryan, Donald C.: Cap Protects Aircraft Nose Cone. NASA Tech Brief LAR-12367. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Materials)
1353. Cason, Wade E., III; Baucom, Robert M.; and Evans, Robert C.: Lightweight Face Mask. NASA Tech Brief LAR-12803. Released 1981.
(Avail: NASA Langley Technology Utilization Office
Category: Fabrication Technology)
1354. Leiffer, James L.; Stoops, William E., Jr.; St. Clair, Terry L.; Watkins, Vernon E., Jr.; and Kelly, Thomas P.: New Pressure-Sensitive Silicone Adhesive. NASA Tech Brief LAR-12737. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Materials)
1355. McNamara, James W.; and Oakley, John W.: Interchangeable Spring Modules for Inertia Measurements. NASA Tech Brief LAR-12402. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Mechanics)

Patents

No patents.

Oral Presentations to Conferences/Workshops

1356. Bowen, Gene: An Introduction to Numerical Control. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
1357. Buckley, John D.: Pultrusion Fabrication - Time and Money Savings for Producing Plastic and Plastic Composite Structures. Presented at the AIAA/NASA Seminar on Advanced Materials Processing and Related Technologies, October 6-7, 1981, Hampton, Virginia.
1358. Copeland, Carl E.: Toroid Joining Gun - Economic Joining of Thermoplastics and Thermoplastic Composites. Presented at the AIAA/NASA Seminar on Advanced Materials Processing and Related Technologies, October 6-7, 1981, Hampton, Virginia.

PUBLICATIONS FOR SYSTEMS ENGINEERING DIVISION

Formal Reports

1359. Bement, Laurence J.; Bush, Harold G.; Heard, Walter L., Jr.; and Stokes, Jack W., Jr.: EVA Assembly of Large Space Structure Element. NASA TP-1872, June 1981, 36 p.
(Avail: NTIS Subject Category 12 RTOP 506-53-43)

Quick-Release Technical Memorandums

1360. Catherines, John J.; and Schwartz, John W.: Vibration Characteristics of a Laser Heterodyne Spectrometer Tunable Diode Laser System Using a Mechanical Cooler Platform. NASA TM-83129, April 1981, 24 p.
(Avail: NTIS Subject Category 36 RTOP 506-61-53)
1361. Cox, John W.: A Summary of Tests on Invar Welded With 308L and 8N12 Welding Rods. NASA TM-83119, June 1981, 34 p.
(Avail: NTIS Subject Category 09 RTOP 542-04-13)
1362. Klich, P. J.; Richards, W. H.; and Ahl, E. L., Jr.: National Transonic Facility Fan Blade Prepreg Material Characterization Tests. NASA TM-81800, July 1981, 83 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-63)

Contractor Reports

1363. Kleinmann, D. E.; Clark, P. P.; Crosbie, S. E.; Crowley, J. C.; Eyring, D. O.; Gray, N. A.; and Kane, S. I.: Conceptual Design Study for the Advanced Limb Scanner. (NAS1-16593 Honeywell, Inc.) NASA CR-165779, December 1981, 215 p.
(Avail: STIF Subject Category 19 RTOP 147-40-01)

Journal Articles and Periodical Literature

1364. Bement, Laurence J.; and Bradshaw, Charles F.: Emergency Systems Enhance Safety in Spin Test Aircraft. Virginia Aviation, July-September 1981, p. 6.
(Avail: Virginia Division of Aeronautics Subject Category 03 RTOP 505-41-13)
1365. Bement, Laurence J.: Explosive Cut "Hatch" for Small Airplanes. AIAA Designer's Notebook, published in Astronautics and Aeronautics, June 1981, p. 51.
(Avail: AIAA Subject Category 03 RTOP 505-41-13)
1366. Lassiter, William S.: Cryogenic Acoustic Attenuator. Astronautics and Aeronautics, Volume 19, No. 1, February 1981, p. 45.
(Avail: AIAA Subject Category 71 RTOP 505-31-63)

1367. Lassiter, William S.: Noise Control in the Cryogenic National Transonic Facility. Noise Control Engineering, Volume 17, Number 2, September/October 1981, p. 76-84.
(Avail: Institute of Noise Control Subject Category 71
RTOP 505-31-63)

Meeting/Conference Papers

1368. Bradley, Obie H., Jr.: Development of a Window Protection Assembly for a Shuttle Experiment. Presented at the 15th Aerospace Mechanism Symposium, May 14, 1981, Huntsville, Alabama.
(Avail: NTIS, NASA CP-2181 Subject Category 18 RTOP 543-01-04)
1369. Lassiter, William S.: The Control of Fan Blade and Exhaust System Noise of a Cryogenic Transonic Wing Tunnel. Presented at the 5th National Noise Conference (NOISE-CON '81), June 8-10, 1981, Raleigh, North Carolina.
(Avail: Noise Control Foundation, Proceedings Subject Category 71
RTOP 505-31-63)
1370. Long, Moses, J.: The Long Duration Exposure Facility Structural Interface. Presented at the 15th Aerospace Mechanisms Symposium, May 14, 1981, Huntsville, Alabama.
(Avail: NTIS, NASA CP-2181 Subject Category 18 RTOP 542-04-13)
1371. Muraca, Ralph: Shuttle Tile Environments and Loads. Presented at the 52nd Shock and Vibration Symposium, October 27-29, 1981, New Orleans, Louisiana.
(Avail: Shock and Vibration Center Bulletin, Proceedings (Pending)
Subject Category 39 RTOP 506-63-13)
1372. Muraca, Ralph: Shuttle Tile Environments and Loads. Presented at the 102nd Meeting of the Acoustical Society of America, November 30-December 4, 1981, Miami Beach, Florida.
(Avail: 1981 Shock and Vibration Center, Proceedings
Subject Category 39 RTOP 506-63-13)

Computer Programs

No computer programs.

Tech Briefs

1373. Averill, Robert D.; and Crossley, Edward A., Jr.: Dynamic Isolation for Cryogenic Refrigerators. NASA Tech Brief LAR-12728. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Machinery)
1374. Gilliland, Charles S.; and Duckett, Roy J.: User Chooses Coating Properties. NASA Tech Brief LAR-12719. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Materials)
1375. Hull, Reid A.: Gentle Arrestor for Moving Bodies. NASA Tech Brief LAR-12372. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Machinery)

- 1376. Irick, Stephen C.: Spiral-Wound Gasket Forms Low-Temperature Seal. NASA Tech Brief LAR-12315. Released 1981.
(Avail: NASA Langley Technology Utilization Office
Category: Fabrication Technology)
- 1377. Long, Moses J.: Interlocking Wedge Joint is Easily Assembled. NASA Tech Brief LAR-12729. Released 1981.
(Avail: NASA Langley Technology Utilization Office Category: Machinery)
- 1378. Waldeck, Gary C.; and Dendy, Joe B. (Sperry Flight Systems): Two-Stage Linearization Circuit. NASA Tech Brief LAR-12577. Released 1981.
(Avail: NASA Langley Technology Utilization Office
Category: Electronic Components and Circuits)

Patents

- 1379. Hull, Reid A.: Moving Body Velocity Arresting Line. U.S. Patent 4,304,320. Issued 1981.
(Avail: U.S. Patent & Trademark Office Subject Category 37)
- 1380. Irick, Stephen C.: Hydraulic Actuator Mechanism to Control Aircraft Spoiler Movement Through Dual Input Commands. U.S. Patent 4,272,046. Issued 1981.
(Avail: U.S. Patent & Trademark Office Subject Category 05)

Oral Presentations to Conferences/Workshops

- 1381. Bement, Laurence J.: Explosive Seam Welding at the NASA Langley Research Center. Presented at the North Carolina Science and Technology Research Center Explosive Welding Seminar, June 16, 1981, Triangle Park, North Carolina.
- 1382. Bement, Laurence J.: Practical Small Scale Explosive Joining. Presented at the AIAA/NASA Seminar on Advanced Materials Processing and Related Technologies, October 6-7, 1981, Hampton, Virginia.
- 1383. Bement, Laurence J.: Advanced Emergency Systems for Commercial Aviation. Presented at the 19th Annual SAFE Silver Anniversary Symposium, December 6-10, 1981, Las Vegas, Nevada.
- 1384. Cockrell, Charlie: CAD/CAM As Viewed by SE&O. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.
- 1385. Stalnaker, Winnie: Finite Element Generating Program - PATRAN-G. Presented at the Workshop on Computer-Aided Modeling, Analysis, Design, and Fabrication, February 9-12, 1981, Hampton, Virginia.

PUBLICATIONS FOR FACILITIES ENGINEERING DIVISION

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Periodical Literature

1386. Hudson, C. Michael: A Root-Mean-Square Approach for Predicting Fatigue-Crack-Growth Under Random Loading. ASTM STP 748 Methods and Models for Predicting Fatigue Crack Growth Under Random Loading, edited by J. B. Hang and C. M. Hudson, 1981, p. 41-52.
(Avail: ASTM Subject Category 26 RTOP 023-22-00)

Meeting/Conference Papers

1387. Greene, Herbert L.; McCoy, Daniel E.; and Taylor, Hunter F.: NASA/Hampton Refuse-Fired Steam Plant - A Municipal/Federal Cooperative Effort. Presented at the ASME/AIAA/ACS/AIChE/ANS/IEEE/SAE 16th Intersociety Energy Conversion Engineering Conference, August 9-14, 1981, Atlanta, Georgia. Paper No. 819280.
(Avail: ASME, Proceedings Subject Category 45)

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

1388. Booth, Franklin W.; and Bruce, Robert A.: Air Removal Device. U.S. Patent 4,302,223. Issued 1981.
(Avail: U.S. Patent & Trademark Office Subject Category 34)

Oral Presentations to Conferences/Workshops

1389. Kelliher, Warren C.: Portable Organic and Inorganic Materials Analyzer.
Presented at the AIAA/NASA Seminar on Advanced Materials Processing and
Related Technologies, October 6-7, 1981, Hampton, Virginia.

PUBLICATIONS FOR OPERATIONS SUPPORT DIVISION

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Periodical Literature

No journal articles and periodical literature.

Meeting/Conference Papers

No meeting/conference papers.

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

Oral Presentations to Conferences/Workshops

No oral presentations to conferences/workshops.

PUBLICATIONS FOR OFFICE OF DIRECTOR FOR MANAGEMENT OPERATIONS

Formal Reports

1390. Mathes, J. C.; and Pinelli, Thomas E. (compilers): Technical Communication - Perspectives for the Eighties. NASA CP-2203, Part 1, December 1981, 237 p.
(Avail: NTIS Subject Category 82)
1391. Mathes, J. C.; and Pinelli, Thomas E. (compilers): Technical Communication - Perspectives for the Eighties. NASA CP-2203, Part 2, December 1981, 341 p.
(Avail: NTIS Subject Category 82)

Quick-Release Technical Memorandums

1392. Mathes, J. C.; and Pinelli, Thomas E. (compilers): Technical Writing: Past, Present, and Future. NASA TM-81966, March 1981, 81 p.
(Avail: NTIS Subject Category 82)
1393. Pinelli, Thomas E.; Glassman, Myron; and Glassman, Nanci A.: A Review and Evaluation of the Langley Research Center's Scientific and Technical Information Program. Results of Phase IV - Knowledge and Attitudes Survey, Academic and Industrial Personnel. NASA TM-81934, February 1981, 60 p.
(Avail: NTIS Subject Category 82)
1394. Pinelli, Thomas E.; Hinnebusch, Patricia A.; and Jaffe, Jack M.: A Review and Evaluation of the Langley Research Center's Scientific and Technical Information Program. Results of Phase V - Design and Evaluation of STI Systems: A Selected, Annotated Bibliography. NASA TM-81954, February 1981, 76 p.
(Avail: NTIS Subject Category 82)
1395. Report and Manuscript Control Office (compiler): Scientific and Technical Information Output of the Langley Research Center for Calendar Year 1980. NASA TM-81950, February 1981, 245 p.
(Avail: NTIS Subject Category 82)

Contractor Reports

1396. Bass, B.; Beall, H. C., Jr.; Brown, J. N.; Clingman, W. H.; Eakes, R. E.; Kizakevich, P. N.; McCartney, M.; and Rouse, D. J.: Biomedical Applications Team - Applications of Aerospace Technology in Biology and Medicine. (NAS1-16177 Research Triangle Institute.) NASA CR-165721, May 1981, 117 p.
(Avail: STIF Subject Category 52 RTOP 141-20-21)

Journal Articles and Periodical Literature

1397. Long, S. A. T.; and Memory, J. D.: Calculations of Spin-Spin Coupling Constants in Aromatic Nitrogen Heterocyclics. Journal of Magnetic Resonance, Volume 44, August 1981, p. 335-360.
(Avail: Academic Press, Inc. Subject Category 25 RTOP 505-33-33)

Meeting/Conference Papers

1398. Pinelli, Thomas E.; Cross, Edward M.; and Glassman, Myron: Evaluating a Scientific and Technical Information Program: The User Perspective. Presented at the 28th International Technical Communication Conference, May 20-23, 1981, Pittsburgh, Pennsylvania.
(Avail: Society for Technical Communications, Proceedings, p. E87-E90
Subject Category 82)
1399. Pinelli, Thomas E.; Cross, Edward M.; Hinnebusch, Patricia A.; and Glassman, Myron: User Input and Program Assessment: An Evaluation of the NASA Langley Scientific and Technical Information Program. Presented at the 44th Annual Meeting of the American Society for Information Science, October 25-30, 1981, Washington, D.C.
(Avail: Society for Technical Communications, Proceedings, p. 224-227
Subject Category 82)
1400. Stohrer, Freda F.; and Pinelli, Thomas E.: The Technical Report as an Effective Medium for Information Transmittal. Presented at the 28th International Technical Communication Conference, May 20-23, 1981, Pittsburgh, Pennsylvania.
(Avail: University of Michigan, Proceedings Subject Category 82)
1401. Stohrer, Freda F.; and Pinelli, Thomas E.: Marketing Information: The Technical Report as Product. Presented at the 32nd Annual Meeting of the Conference on College Composition and Communication, March 26-28, 1981, Dallas, Texas.
(Avail: NTIS, NASA TM-81966, p. 5-16 Subject Category 82)

Computer Programs

No computer programs.

Tech Briefs

1402. Carr, Kenneth L. (Microwave Associates, Inc.): Compact Dual-Mode Microwave Antenna. NASA Tech Brief LAR-12784. Released 1981.
(Avail: NASA Langley Technology Utilization Office
Category: Electronic Components and Circuits)

Patents

No patents.

Oral Presentations to Conferences/Workshops

No oral presentations to conferences/workshops.

PUBLICATIONS FOR ARMY STRUCTURES LABORATORY (AVRADCOM)

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

1403. Eastman, L. B.: Main Rotor Six Degree-of-Freedom Isolation System Analysis. (NAS1-16168 Sikorsky Aircraft - United Technologies Corporation.) NASA CR-165665, May 1981, 56 p.
(Avail: NTIS Subject Category 05 RTOP 505-10-39)
1404. Flannelly, W. G.; Fabunmi, J. A.; and Nagy, E. J.: Analytical Testing. (NAS1-15414 Kaman Aerospace Corporation.) NASA CR-3429, May 1981, 152 p.
(Avail: NTIS Subject Category 39 RTOP 505-42-39)
1405. Halwes, Dennis R.: Total Main Rotor Isolation System Analysis. (NAS1-16211 Bell Helicopter Textron.) NASA CR-165667, June 1981, 141 p.
(Avail: NTIS Subject Category 05 RTOP 505-10-39)
1406. Sankewitsch, V.: Total Main Rotor Isolation System Analysis. (NAS1-16176 Boeing Vertol Company.) NASA CR-165666, March 1981, 80 p.
(Avail: NTIS Subject Category 05 RTOP 505-10-39)

Journal Articles and Periodical Literature

No journal articles and periodical literature.

Meeting/Conference Papers

No meeting/conference papers.

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

Oral Presentations to Conferences/Workshops

No oral presentations to conferences/workshops.

APPENDIX

INDUSTRIAL APPLICATIONS CENTERS

Aerospace Research Applications Center
1201 East 38th Street
Indianapolis, IN 46205
(317) 264-4644

Kerr Industrial Applications Center
Southeastern Oklahoma State University
Station A, Box 2584
Durant, OK 74701
(405) 924-6822

NASA Industrial Applications Center
701 LIS Building
University of Pittsburgh
Pittsburgh, PA 15260
(412) 624-5211

NASA Industrial Applications Center
University of Southern California
Denny Research Building
University Park
Los Angeles, CA 90007
(213) 743-6132

New England Research Applications Center
Mansfield Professional Park
Storrs, CT 06268
(203) 486-4533

North Carolina Science and Technology Research Center
Post Office Box 12235
Research Triangle Park, NC 27709
(919) 549-0671

Technology Applications Center
University of New Mexico
2500 Central Avenue, SE
Albuquerque, NM 87131
(505) 277-3622

NASA/Florida State Technology Applications Center
State University System of Florida
500 Weil Hall
Gainesville, FL 32611
(904) 392-6626

NASA/UK Technology Applications Program
University of Kentucky
109 Kinkead Hall
Lexington, KY 40506

AUTHOR INDEX

Aanstoos, J. V.: 149, 174
 Abbas, Mian M.: 1093, 1124
 Abbott, Terence S.: 813
 Abel, Irving: 668, 673, 674, 676, 681, 715, 716, 719, 729
 Ace, R. E.: 822
 Adams, James J.: 91, 131
 Adams, Mary S.: 882, 945
 Adams, Richard R.: 307
 Adams, William M., Jr.: 36
 Adcock, Jerry B.: 977, 1041
 Adelman, Howard M.: 675, 689, 717, 718, 740
 Agrawal, Pradeep K.: 604
 Aherron, R. M.: 175, 196
 Ahl, E. L., Jr.: 1362
 Ahmadi, Ali Reza: 996
 Akey, N. D.: 150
 Akgerman, Nuri: 1348, 1351
 Akpan, Ime I.: 119
 Alexander, W. K.: 937
 Alfaro-Bou, Emilio: 616
 Alishahi, M. M.: 1003
 Allario, Frank: 1085, 1124, 1146
 Allen, Jerry M.: 920
 Almroth, B. O.: 580, 581
 Alston, Daisy W.: 1029
 Alvarez, J. M.: 1093, 1124
 Ames, Kathy R.: 946
 Amiet, Roy K.: 509
 Andersen, Carl M.: 582
 Anderson, Griffin Y.: 935, 947
 Anderson, Mark A.: 51
 Anderson, Melvin S.: 568, 572, 575, 576, 577, 604, 605, 615, 617, 631
 Anderson, Willard W.: 130
 Andrews, Earl H.: 921
 Anon: 1, 21, 22, 43, 132, 133, 134, 135, 245, 764, 765, 766, 767
 Anthony, Frank M.: 583, 584
 Arduini, R. F.: 175, 196
 Armaly, Bassem F.: 1202, 1224
 Armstrong, Ernest S.: 79, 112
 Arnquist, John: 697
 Arrott, A. S.: 276
 Arvin, G. H.: 357
 Ash, R.: 919
 Ashby, George C., Jr.: 1225, 1234
 Ashworth, Billy R.: 64
 Augustsson, Tommy R.: 295, 1108, 1133, 1149
 Ausrotas, Raymond A.: 778
 Averill, Robert D.: 1373
 Avery, Don E.: 666, 667, 671, 689, 740

Baals, Donald D.: 980
 Bachalo, W. D.: 824
 Bahn, Gilbert S.: 1319, 1326
 Bailey, M. C.: 176, 177
 Bailey, Paul L.: 1101, 1170
 Bainum, P. M.: 100, 111
 Bair, C. H.: 293
 Baker, A. A.: 888
 Baker, Donald J.: 452
 Bakshi, Kiran R.: 429, 430
 Balakrishna, S.: 1028
 Balasubramanian, R.: 889
 Bales, John W.: 80
 Bales, Kay S.: 569
 Bales, Thomas T.: 447
 Bandeen, William R.: 1085
 Bangert, L. H.: 779
 Banks, D. W.: 837
 Bare, E. Ann: 856, 925
 Barger, Raymond L.: 857, 858, 859
 Barie, Walter P., Jr.: 429, 430
 Barker, L. Keith: 80
 Barkstrom, Bruce R.: 1125, 1140, 1147
 Barna, P. Stephen: 997
 Barnes, James C.: 1306
 Barnwell, Richard W.: 967
 Barthelemy, Jean-Francois: 690, 742
 Bartlett, David S.: 1312
 Bartman, Fred L.: 1088
 Barton, C. Kearney: 517, 518, 529, 539
 Bass, B.: 1396
 Basta, Thaddeus, Jr.: 312
 Batson, Vernon M.: 178
 Batterson, James G.: 81, 89, 113, 117
 Baucom, Robert M.: 411, 436, 1353
 Bauschlicher, Charles W., Jr.: 274
 Bavuso, Salvatore J.: 179, 202, 206, 216
 Bayliss, Alvin: 519, 526, 537
 Beach, H. Lee, Jr.: 948
 Beall, H. C., Jr.: 1396
 Beasley, William D.: 979
 Beck, Sherwin M.: 1295
 Beckwith, Ivan E.: 860, 862, 883
 Beggs, William C.: 372
 Belcastro, C.: 217
 Bell, Vernon L.: 384, 467
 Belvin, W. Keith: 618
 Bement, Laurence J.: 1359, 1364, 1365, 1381, 1382, 1383
 Bendura, R. J.: 1291, 1336, 1337
 Bennett, Ricarda L.: 499
 Bennett, Robert M.: 676, 719
 Benz, Harry A.: 214
 Bergeron, Hugh P.: 108, 127
 Berman, Alex: 585
 Berrier, Bobby L.: 856

Berry, John D.: 1030
 Berthold, Gert: 219
 Bess, T. Dale: 1094, 1126
 Beswick, Alfred G.: 1266
 Beuyukian, Charles S.: 645
 Bhartia, P.: 1159
 Bhat, Rama B.: 669, 713
 Bice, Karen L.: 1303, 1304, 1305
 Bigelow, C. A.: 340
 Bilanin, Alan J.: 503, 838
 Billhardt, Carl F.: 1348, 1351
 Bingham, Gene J.: 968, 1065
 Biringen, Sedat: 890, 891, 892
 Birrer, Ivan J.: 219, 232
 Black, Peter: 222
 Blackburn, C. L.: 619
 Blackshear, W. T.: 1157, 1173
 Blackwell, R. H.: 708
 Blair, A. B., Jr.: 907, 920, 922
 Blair, W.: 695
 Blanchard, Robert C.: 1252
 Bland, S. R.: 722
 Blanton, J. O.: 172
 Block, P. J. W.: 520
 Blosser, Max L.: 689, 720, 740
 Blume, Hans-Juergen C.: 167, 168, 180, 181, 187, 218
 Bobbitt, P. J.: 1039
 Boghani, A. B.: 594
 Bonner, E.: 1058
 Booth, Franklin W.: 1388
 Boppe, Charles W.: 1055, 1059
 Bouchalis, C.: 1002
 Boughner, Robert E.: 1108, 1148, 1154
 Bourland, G.: 358
 Bowen, D. Gene: 1351, 1356
 Bowen, John: 65
 Bower, Robert E.: 762, 763
 Bowker, David E.: 1326
 Bowles, D. E.: 385, 412, 413, 433
 Bowley, Clinton J.: 1306
 Bowman, James S., Jr.: 814
 Bowman, Malcolm J.: 1313
 Boyden, Richmond P.: 991, 1047
 Bracalente, Emedio M.: 191, 192, 219, 232
 Bradley, Obie H., Jr.: 1368
 Bradley, Pamela F.: 1181, 1226
 Bradshaw, Charles F.: 1364
 Bragg, Michael B.: 823, 829, 835
 Braslow, Albert L.: 151
 Breazeale, M. A.: 268, 277
 Breckenridge, Roger A.: 173
 Brewer, Dana A.: 1078, 1149
 Brewer, W. D.: 342, 395, 457, 458
 Brien E. P.: 1246
 Brinton, H. C.: 1167

Britcher, C. P.: 998
 Britt, C. L.: 160
 Britt, Charles L., Jr.: 191, 192
 Brock, F. J.: 1249
 Brock, Larry D.: 157, 158, 182
 Brogan, F. A.: 580, 581
 Brooke, Robert R.: 1163
 Brooks, Charles W.: 211
 Brooks, David R.: 1286
 Brooks, Joseph D.: 1027
 Brooks, Thomas F.: 521, 522
 Browell, Edward V.: 1095, 1127, 1128, 1150, 1151, 1152, 1172
 Brown, Clarence A., Jr.: 1287, 1333
 Brown, G. L.: 536
 Brown, J. N.: 1396
 Brown, Lawrence W.: 95
 Brown, Philip W.: 854
 Brown, Ron: 513
 Brown, W. H.: 514
 Bruce, Robert A.: 1388
 Bruckman, F. A.: 779
 Bryan, Charles F., Jr.: 1352
 Bryan, Donald C.: 1352
 Bryant, Charles S.: 319
 Bryant, Emmett L.: 252
 Bryant, W. H.: 190
 Buckley, John D.: 1347, 1349, 1357
 Buhlmann, F.: 634
 Buoncristiani, A. M.: 1182, 1183, 1184, 1227, 1228
 Burcher, Ernest A.: 170
 Burke, Hsiao-hua: 1306
 Burks, Harold D.: 341, 448
 Burner, Alpheus W.: 246, 247, 250, 257, 269
 Bursik, Joseph W.: 1031
 Bush, Harold G.: 570, 610, 622, 646, 653, 1359
 Bushnell, Dennis M.: 908, 909, 911, 913, 914, 923, 931
 Butler, J. F.: 266
 Butler, John M.: 446
 Byvik, Charles E.: 1182, 1183, 1184, 1215, 1216, 1227, 1228, 1229, 1265, 1271, 1276

 Calise, Anthony J.: 121
 Callahan, Ron: 51
 Callis, Linwood B.: 1096, 1114, 1153, 1154, 1166
 Calloway, Robert L.: 1174
 Camarda, Charles J.: 647, 709, 721
 Campbell, James F.: 1020
 Campbell, Janet W.: 1288, 1289, 1323, 1327, 1328, 1329
 Campbell, Richard L.: 969
 Campbell, Thomas G.: 183, 184, 185, 1247
 Cannon, Dennis G.: 851
 Cantrell, John H., Jr.: 268, 270, 271, 277, 278, 279, 280, 281, 282, 283, 308, 320,
 321, 322
 Capone, Francis J.: 856, 861, 924, 925, 932
 Capron, William R.: 136, 152
 Captain, K. M.: 594

Card, Michael F.: 604
 Carden, Huey D.: 562, 620
 Carlson, C. W.: 949
 Carlson, Charles H.: 926
 Carlson, F. M.: 188
 Carlson, Harry W.: 927
 Carmichael, B. H.: 893
 Carr, Kenneth L.: 1402
 Carson, George T., Jr.: 970
 Carter, A. F.: 1095, 1151
 Carter, W. V.: 937
 Cary, Aubrey M., Jr.: 909
 Casas, Joseph C.: 1142
 Casasent, David: 153
 Cason, Wade E., III: 1353
 Catherines, John J.: 1360
 Cazier, F. W., Jr.: 612, 753
 Chalk, C. R.: 781
 Chambers, Joseph R.: 839, 840, 841, 847
 Chameides, William L.: 1085, 1163
 Champine, Gloria R.: 1185
 Chang, C. K.: 1244
 Chang, Jen-Fu: 1006, 1007
 Chapman, A. J.: 39
 Chatterjee, J. S.: 145
 Cheo, P. K.: 323
 Chern, Engmin J.: 270, 279, 281, 291, 292
 Chovil, D. V.: 23
 Chow, H.: 1255, 1279
 Chow, P. L.: 523
 Christensen, Diane G.: 104
 Chu, W. P.: 1112, 1113, 1119, 1120
 Chuan, Raymond L.: 1097, 1144
 Ciaifa, Caesar: 632
 Clark, Clyde E.: 64
 Clark, Ivan O.: 144, 188, 224
 Clark, Lenwood G.: 20
 Clark, Leonard V.: 334
 Clark, P. P.: 1363
 Clark, Ronald K.: 437
 Clark, Samuel K.: 588
 Clark, T. L.: 500
 Claus, Richard O.: 271, 282, 283
 Clauss, J. S., Jr.: 779
 Clement, Stephen C.: 1303, 1304, 1305
 Clemmons, James I., Jr.: 248
 Clemmons, Marvin: 66
 Clemmons, Richard E.: 636, 637, 638, 639, 640, 641, 642, 643, 644, 650
 Clendenin, C. G.: 1145
 Clevenson, Sherman A.: 492, 494, 530, 533
 Clever, W.: 1058
 Cliff, E. M.: 114
 Cline, J. H.: 540, 754, 756
 Cline, M. C.: 928
 Clingman, W. H.: 1396

Cobbs, W. L.: 24
 Cockrell, C. R.: 142
 Cockrell, Charlie: 1384
 Cofer, Wesley R., III: 251, 299, 1290, 1314, 1315, 1337
 Cole, Stanley R.: 120
 Coleman, R. G.: 944
 Colt, J. Z.: 583
 Compton, Harold R.: 1231, 1272
 Condon, Estelle P.: 1115, 1168
 Conner, D. William: 794
 Conner, David A.: 1040
 Conway, E. J.: 1230, 1235
 Cooper, Paul A.: 606, 613, 621, 656
 Copeland, Carl E.: 1358
 Corke, T. C.: 894
 Corlett, William A.: 869, 884, 885, 886, 887
 Costen, Robert C.: 1098, 1155
 Couch, Lana M.: 647, 751
 Covert, E. E.: 1003
 Cox, John W.: 1361
 Cox, R. L.: 358
 Coy, Paul F.: 854
 Coyner, John V.: 655
 Crabill, Norman L.: 8, 820, 842
 Craidon, Charlotte: 67
 Craven, J. D.: 1158, 1159
 Crawford, Daniel J.: 68
 Crawford, John P.: 207, 220, 227
 Crawford, Robert F.: 655
 Credeur, Karen R.: 1344
 Credeur, Leonard: 136, 143
 Creedon, J. F.: 140
 Creel, Theodore R., Jr.: 862
 Crews, John H., Jr.: 336, 386, 404, 475
 Crisp, Vicki: 1283
 Crocker, J. F.: 27
 Crocker, Malcolm J.: 527
 Crosbie, S. E.: 1363
 Cross, Edward M.: 1398, 1399
 Cross, Ernest J., Jr.: 828
 Crossley, Edward A., Jr.: 1373
 Crossman, Frank W.: 463
 Crosswell, William F.: 186, 187, 221, 230
 Crouch, Roger K.: 144, 188, 189, 224
 Crowley, J. C.: 1363
 Crumbly, Kenneth H.: 10
 Cubbage, J. M.: 953
 Cunningham, H. J.: 612, 737
 Cunningham, Sally W.: 571
 Cunnold, Derek M.: 1082
 Cupschalk, Stephen G.: 465

DaCosta, Roy A.: 780
 Dagenhart, J. Ray: 971
 Daluge, D. R.: 154
 Daniel, I. M.: 586
 Danieleley, Ned D.: 387
 Daniels, Edward F.: 489
 Darden, Christine M.: 863, 950
 Davidson, John R.: 438
 Davidson, Robert E.: 972
 Davis, Christina M.: 136
 Davis, Douglas D.: 1085
 Davis, E. E.: 1232
 Davis, G. W.: 587
 Davis, Richard E.: 139, 175, 196, 204
 Deal, Perry L.: 820, 842
 Deam, Dirk J.: 101
 Deaton, Jerry W.: 414, 449
 Debnam, William J.: 144, 188, 189, 224
 Dechaumphai, Pramote: 692, 744
 Deere, M. J.: 904
 DeIasi, Richard J.: 362
 Delale, F.: 359, 360, 361
 Delnore, Victor E.: 222, 232, 233, 241
 DeLoach, Richard: 478, 531
 Dempsey, Thomas K.: 483, 554, 560
 Dendy, Joe B.: 1378
 DeRyder, L. J.: 1273
 Deshpande, M. D.: 176
 Desmarais, Robert N.: 607, 693, 745
 Desper, O. E.: 23
 Deuel, D. R.: 160
 Devendorf, D.: 260
 Dexter, H. Benson: 415, 416
 DeYoung, John: 787
 DeYoung, Russell J.: 1203, 1204, 1233, 1269
 Dharani, Lokeshwarappa R.: 366
 DiCarlo, Daniel J.: 833, 839
 Dillon, James L.: 910
 Dilts, Doug: 14
 Divan, P.: 1058
 Doane, Stephanie M.: 102
 Dobbs, Kerwin D.: 401
 Dodge, Richard N.: 588
 Dodgen, J. A.: 1147
 Doggett, Robert V., Jr.: 753
 Dollyhigh, Samuel M.: 803
 Dome, George: 219
 Dotson, Edward H.: 1068
 Doty, J. L.: 824
 Dove, B.: 223
 Dovi, A. R.: 619, 736
 Dowell, E. H.: 722
 Downing, D. R.: 190
 Driver, Cornelius: 795, 804, 805, 806
 Drummond, J. Philip: 929, 942

Duckett, Roy J.: 1374
Duffy, Jack W.: 104
Dunbeck, P. D.: 511
Duncan, C. H.: 1147
Dunlop, Douglas D.: 57
Dunn, H. J.: 82, 96, 109
Dunn, K.: 1058
Dunning, E. G.: 24, 26
Durling, Barbara J.: 568, 636, 637, 638, 639, 640, 641, 642, 643, 644, 650
Dvorak, G. J.: 388, 389, 417
Dwoyer, Douglas L.: 973, 992, 1032, 1033
Dynes, P. J.: 364

Eakes, R. E.: 1396
Earl, Henry S., Jr.: 146
Eastman, L. B.: 1403
Eaton, W. C.: 1309, 1311
Eckstrom, Clinton V.: 614
Edahl, Robert A., Jr.: 299
Edelman, R. B.: 895
Edighoffer, Harold H.: 589, 608, 624
Edmonds, W.: 155
Edwards, Howard B.: 309
Edwards, John W.: 677, 723, 1034
Edwards, S. Franklin: 254, 284
Eide, D. G.: 1234
Ejim, T. I.: 224
Ekvall, J. C.: 27
Elber, Wolf: 444, 450
El-Hady, Nabil M.: 999, 1000
Elrod, S. D.: 363
Enevoldson, Einar K.: 815, 843
England, J. Nick: 203
Ephrath, A. E.: 115
Eppler, Richard: 1057, 1062
Erdogan, F.: 359, 360, 361
Ernst, H.: 825
Esaias, Wayne E.: 1313, 1316, 1329, 1330, 1331, 1333
Espil, G. J.: 780, 792
Esposito, John J.: 697
Eudaily, R. R.: 27
Evans, Robert C.: 1353
Everest, D. L., Jr.: 780, 783
Exton, R. J.: 275, 285
Eyring, D. O.: 1363
Ezzell, Stephen A.: 350, 418

Fabert, M.: 155
Fabris, G.: 895
Fabunmi, J. A.: 1404
Faery, H. F., Jr.: 1001
Fairbank, W. M., Jr.: 275
Fales, Carl L.: 209
Farassat, F.: 481, 524
Farley, Gary L.: 337, 451, 452

Farley, H. L.: 594
 Farmer, Crofton B.: 1117, 1137
 Farmer, Franklin H.: 1287, 1332
 Farmer, Moses G.: 693, 745
 Farnsworth, Dave L.: 212
 Farrell, C. E.: 1191
 Fasanella, Edwin L.: 616
 Faulcon, Nettie D.: 304
 Fedors, John C.: 168
 Ferguson, Robert L.: 1302
 Ferl, James E.: 338, 390, 419
 Ferris, Alice T.: 286
 Fidell, S.: 501
 Fields, James M.: 493
 Findlay, John T.: 1192, 1231
 Fiory, A. T.: 276
 Fischer, Raymond W.: 702
 Fish, R. B.: 594
 Fisher, Bruce D.: 820, 842
 Fisher, W.: 1099
 Fishman, Jack: 1100, 1110, 1121, 1156
 Flannelly, W. G.: 1404
 Flat, A.: 1267
 Flechner, Stuart G.: 1069
 Fleury, C.: 748
 Fogg, L. D.: 26
 Fornes, R. E.: 420
 Fortescue, P. W.: 1002
 Foss, Willard E., Jr.: 768
 Foster, Lee R., Jr.: 19
 Fox, Charles H., Jr.: 1066, 1067
 Fox, J.: 1160
 Fox, Susan C.: 1339
 Foye, Raymond L.: 421
 Frank, L. A.: 1158, 1159
 Franke, John M.: 269, 310, 311, 318
 Fratello, David J.: 553
 Freeman, Delma C., Jr.: 1251
 Friesen, W. J.: 1235
 Frink, Neal T.: 978, 1021, 1043
 Fripp, Archibald L.: 144, 188, 189, 224
 Frost, R. K.: 364
 Fuller, Dennis E.: 974, 975
 Fuller, W. H.: 1119
 Fulton, Robert E.: 609, 657, 658
 Furtsch, T. A.: 440

Gabel, Richard: 696
 Galeas, R.: 374
 Galloway, Thomas L.: 793
 Gangler, James J.: 1349
 Gardner, Mickey R.: 439
 Garner, H. Douglas: 225
 Garrahan, J. G.: 1193
 Garrard, W. L.: 109

Garrett, L. Bernard: 1076, 1077, 1175, 1236, 1237
 Garrick, I. E.: 710, 724
 Gartrell, Luther R.: 249, 310
 Gatski, T. B.: 532
 Geisler, D. L.: 502
 Geist, Robert M.: 166
 Geller, E. W.: 704
 Gentry, Garl L., Jr.: 975
 Gera, J.: 843
 Gianatasio, Anthony J.: 215
 Gibbins, Martin N.: 365
 Gibson, Gary G.: 1317
 Giesy, Daniel P.: 122
 Gilbert, R. D.: 420
 Giles, Gary L.: 623, 678, 679, 725
 Gille, John C.: 1099, 1101, 1118, 1170
 Gilliland, Charles S.: 1374
 Gilreath, Melvin C.: 145, 146
 Glaser, Robert E.: 156
 Glassman, Myron: 1393, 1398, 1399
 Glassman, Nanci A.: 1393
 Glenn, Floyd A., III: 102
 Gloss, Blair B.: 976, 990, 1053
 Gnoffo, Peter A.: 1178
 Goad, William K.: 246, 247, 250, 257, 1087
 Goans, Ronald E.: 280, 322
 Godby, L.: 779
 Goldman, A.: 1169
 Golub, R. A.: 544
 Gomborg, Richard: 1102
 Gooderum, Paul B.: 249, 1068
 Gordley, Larry L.: 1103, 1118, 1170
 Goree, James G.: 366
 Gormsen, Barbara B.: 1089, 1142
 Goslee, J. W.: 1238, 1239
 Govindaraj, K. S.: 781
 Gowdey, Joe C.: 495
 Gracey, C.: 114
 Graedel, Thomas E.: 1109
 Grafton, Sue B.: 840
 Grams, Gerald W.: 1091, 1112, 1113
 Grana, David C.: 1339
 Grant, W. B.: 1324
 Grantham, William L.: 191, 192, 237
 Graves, Randolph A., Jr.: 1205, 1212, 1217
 Gray, N. A.: 1363
 Green, Lawrence L.: 1035
 Green, Richard N.: 1079, 1094, 1104, 1122, 1129
 Greene, Christopher S.: 1200
 Greene, George C.: 483, 1036, 1037
 Greene, Herbert L.: 1387
 Greene, William H.: 576, 577, 631
 Gregory, Gerald L.: 1110, 1290, 1295, 1296, 1297, 1337
 Greiling, P. T.: 260
 Grenich, A. F.: 1240

Grew, Gary W.: 193
 Gridley, Doreen: 52
 Gridley, J.: 467
 Griffin, C. F.: 25, 26
 Griffin, William A.: 333
 Griggs, M.: 1307
 Groom, Nelson J.: 83, 84, 99, 130
 Groot, H.: 189
 Grose, William L.: 1080, 1105, 1157, 1173
 Gross, Chris: 312
 Grosveld, Ferdinand W.: 506, 507, 550, 551, 559
 Gruber, A.: 1147
 Guerra, M.: 262
 Guezennec, Y.: 894
 Gurganus, E. A.: 1294, 1298, 1325
 Guy, Robert W.: 864, 948

 Hafez, Mohamed: 1038
 Haftka, Raphael T.: 635, 648, 675, 717, 718, 735
 Haggard, Kenneth V.: 1080, 1105
 Hajela, Prabhat: 726
 Haldeman, C. W.: 1003
 Hall, Alton C.: 64
 Hall, Jon F.: 896
 Hall, Robert M.: 977, 1031, 1068
 Halwes, Dennis R.: 1405
 Halyo, Nesim: 137, 169, 197, 226
 Ham, J. A.: 1001
 Hamer, H. A.: 111
 Hamersveld, J. Van: 27
 Hamill, Patrick: 1112
 Hamilton, H. Harris, II: 1205, 1259
 Hammond, C. E.: 494, 533, 540, 712, 754
 Hanisch, B.: 825
 Hanley, L. D.: 157, 158
 Hardesty, Charles A.: 170, 1326
 Hardin, Jay C.: 479, 534, 558
 Harper, Philip M., Sr.: 654
 Harrington, Richard F.: 194, 207, 220, 227, 241
 Harris, Charles D.: 993
 Harris, Jack E.: 10
 Harris, Randall L., Sr.: 85, 93, 94, 115, 116
 Harris, Roy V., Jr.: 951
 Harrison, Edwin F.: 1317, 1334, 1342
 Harriss, Robert C.: 1318, 1321
 Harsha, P. T.: 895
 Harvey, S. T.: 23
 Harvey, William D.: 1025, 1039
 Harward, Charles N.: 293, 294, 295
 Hasel, Lowell E.: 865, 952
 Hashin, Zvi: 379
 Hatfield, Jack J.: 178, 195, 203
 Hayduk, Robert J.: 620, 626
 Hayes, Clyde: 866, 867, 930
 Hays, D.: 9

Heard, Walter L., Jr.: 570, 610, 622, 1359
 Heath, D. Michele: 1087
 Hecht, A. M.: 503
 Heck, Michael L.: 1231
 Hedgepeth, John M.: 590, 591, 655, 1194
 Hedin, A. E.: 1167
 Heer, Ewald: 86, 87
 Hefner, Jerry N.: 911
 Heinbockel, J. H.: 1230
 Heinrich, B.: 276
 Heldenfels, Richard R.: 3
 Helenbrook, Robert G.: 583, 584
 Hellbaum, Richard F.: 140
 Helms, Vernon T., III: 1234, 1241
 Henderson, William P.: 868
 Hendricks, Herbert D.: 238, 287
 Henley, William C.: 302
 Hennessy, Katherine W.: 568
 Henshaw, Mary: 5, 6
 Hepler, Andrew K.: 697, 698
 Herakovich, C. T.: 385, 413
 Hergenrother, Paul M.: 391, 392, 393, 422, 423, 453
 Herman, B. M.: 1112, 1113
 Herstrom, Catherine L.: 572
 Hertel, Richard J.: 261
 Hertz, Terrence J.: 727
 Hertzberg, P. E.: 592
 Hess, Robert V.: 288
 Hett, E. M.: 384
 Hewell, J. G., Jr.: 784
 Heyman, Joseph S.: 268, 270, 281, 289, 290, 291, 292, 298, 308, 313, 324, 325, 326, 438
 Heyson, Harry H.: 796
 Higher Order Software, Inc.: 60, 62
 Hildebrand, B. P.: 824
 Hill, Gerald F.: 251
 Himmelblau, H.: 535, 555
 Hinkley, E. David: 1085
 Hinnebusch, Patricia A.: 1394, 1399
 Hinson, Edwin W.: 1195
 Hinton, David A.: 88
 Hirayama, Mack Y.: 636, 637, 638, 639, 640, 641, 642, 643, 644, 650
 Hoad, Danny R.: 1040
 Hodges, G. E.: 703
 Hodges, W. Todd: 421
 Hodgson, Thomas H.: 522
 Hoell, James M., Jr.: 293, 294, 295
 Hoffman, Daniel J.: 367
 Hofmann, D. J.: 1119
 Hogan, D. B.: 1152
 Hohl, Frank: 1186, 1209, 1269
 Hoilman, Kent A.: 261
 Holdeman, James D.: 139, 204
 Holden, Michael S.: 1196
 Hollenbaugh, D. D.: 494, 533

Holley, Barbara B.: 860, 862
 Holloway, P. H.: 1206, 1242
 Holloway, Paul F.: 606, 1076, 1077
 Holmes, Bruce J.: 836, 844, 854
 Holmes, Harlan K.: 327
 Holt, William H.: 316
 Hom, K. W.: 953
 Honaker, William C.: 272
 Hong, C. S.: 336
 Hood, Ray V.: 38
 Hook, Ray: 1207
 Hopkins, Albert L., Jr.: 157, 158, 182
 Horne, C.: 544
 Horner, Garnett C.: 119, 120, 126
 Horonjeff, R.: 501
 Houbolt, John C.: 4, 807
 Houck, Jacob A.: 45
 Houghton, W. M.: 285, 1325
 House, Frederick B.: 1136
 Housner, Jerrold M.: 623, 624
 Howard, F.: 914, 931
 Howe, M. S.: 504, 505
 Howell, Roger: 1066
 Howell, W. Edward: 454
 Howell, William E.: 1110
 Hoyt, Ronald F.: 332
 Hubbard, Harvey H.: 480, 506, 507
 Huber, Rudolph F.: 752
 Huck, Friedrich O.: 137, 169, 175, 196, 197
 Hudson, C. Michael: 1386
 Hueschen, Richard M.: 140, 226
 Hueser, J. E.: 1249
 Huffman, J. K.: 1049
 Hull, Reid A.: 1375, 1379
 Humes, Donald H.: 1176
 Humphreys, E. A.: 368
 Hunt, B. L.: 924, 932
 Hunt, James L.: 910, 926, 949, 953
 Hunt, L. Roane: 671
 Hunter, William W., Jr.: 249, 272
 Huynh, Quyen Q.: 897
 Hyer, M. W.: 369, 433, 546
 Hypes, Warren D.: 1329

 Ibrahim, Samir R.: 611, 625
 Igoe, William B.: 975
 Iliff, Kenneth W.: 841
 Imig, Leland A.: 439
 Ingard, K. U.: 511
 Ioup, George E.: 301
 Ioup, Juliette W.: 301
 Irick, Stephen C.: 1376, 1380
 Isaacs, R. G.: 1092
 Israeli, L.: 357

Jackson, A. C.: 27
 Jackson, Bettylou W.: 228
 Jackson, Charlie M., Jr.: 869
 Jackson, L. Robert: 649, 917
 Jackson, Liam R.: 1270
 Jacobs, Peter: 1069
 Jaffe, Jack M.: 1394
 Jafri, J. A.: 274, 328
 Jalink, A., Jr.: 1147
 Jalufka, Nelson W.: 1208, 1209, 1210, 1211, 1274
 Jamison, E. S.: 23
 Jansson, D. G.: 157, 158
 Jarrett, Olin, Jr.: 1287, 1333
 Javan, A.: 262
 Jeffcoat, R. L.: 594
 Jeffery, Philip A. E.: 752
 Jensen, J. Kermit: 622
 Jensen, Ronald N.: 1343, 1345
 Jobson, Daniel J.: 170, 209, 1326
 Johnson, Charles B.: 870, 1022, 1041
 Johnson, E. S.: 782
 Johnson, James W.: 187, 221, 229, 230, 231
 Johnson, Joseph L., Jr.: 839
 Johnson, Robert R.: 593
 Johnson, Robert W.: 1319, 1320
 Johnson, Thomas D., Jr.: 1012
 Johnson, W. S.: 388, 389, 394, 417, 455, 456
 Johnson, William G., Jr.: 991
 Johnston, Patrick J.: 910, 953
 Johnston, R.: 825
 Jones, A. D.: 536
 Jones, Douglas L.: 373
 Jones, Gary K.: 630
 Jones, J. S.: 364
 Jones, Jim J.: 1243
 Jones, Kenneth L.: 5, 6
 Jones, L. B.: 1171
 Jones, S.: 1145
 Jones, W. Linwood, Jr.: 191, 192, 207, 220, 222, 228, 232, 233, 241
 Jones, Walter F.: 366
 Jordan, F. L.: 835
 Joshi, Suresh M.: 84, 103

 Kahlbaum, Bill: 69
 Kamaratos, E.: 1218, 1244
 Kamat, Manohar P.: 626
 Kane, S. I.: 1363
 Kantsios, Andronicos G.: 296, 302
 Karns, John R.: 684, 733
 Karpel, Mordechay: 699
 Kasprzak, W. T.: 1167
 Kathiresan, K.: 380
 Katzberg, Stephen J.: 170, 171, 209
 Kaufman, Louis G., II: 870
 Kaza, K.: 711

Keating, Gerald M.: 1106, 1107, 1158, 1159, 1160, 1161, 1167
 Keller, James D.: 1063
 Kelley, H. J.: 114
 Kelley, J. W.: 380
 Kelley, Wendell W.: 815, 852, 853
 Kelliher, Warren C.: 684, 733, 1389
 Kelly, G. Mel: 1192, 1197
 Kelly, George M.: 1231
 Kelly, H. Neale: 647, 689, 740
 Kelly, Thomas P.: 1354
 Kelly, W. Lane, IV: 138, 173, 174
 Kemp, William B., Jr.: 1056
 Kendall, Bruce M.: 168, 172, 180, 198
 Kenigsberg, Irwin: 11
 Kent, Geoffrey S.: 1082
 Kerpelman, Sally E.: 220
 Kerrebrock, J. L.: 511
 Key, Kelli F.: 525
 Keyser, Gerald L., Jr.: 820, 842
 Khandelwal, G. S.: 253
 Khandelwal, Govind A.: 1221
 Kibler, Kemper S.: 46
 Kidder, Paul W.: 411, 436
 Kilzer, L.: 384
 Kim, Jeung G.: 231
 Kizakevich, P. N.: 1396
 Kizer, J. A.: 370
 Kjølgaard, Scott O.: 821, 1046
 Klein, Vladislav: 89, 117, 125
 Kleinmann, D. E.: 1363
 Klemas, Vytautas: 1312
 Klenk, K.: 1159
 Klich, P. J.: 1362
 Knapp, Karl: 591, 1194
 Knight, John C.: 57
 Knight, Vernie H., Jr.: 199
 Knox, Charles E.: 845, 851
 Ko, M.: 1092
 Koch, T. L.: 263, 264
 Koetje, Edward L.: 697
 Kojima, J.: 1058
 Koller, G. M.: 586
 Kopia, Leonard P.: 200
 Koprivier, Frank, III: 40, 41
 Kossler, W. J.: 276
 Kowitz, Herbert R.: 171
 Kraemer, G. O.: 954
 Kraemer, R. A.: 1003
 Kray, R. J.: 371
 Kreitinger, Richard L.: 37
 Krishna, R.: 100, 111
 Kroll, Richard I.: 636, 637, 638, 639, 640, 641, 642, 643, 644, 650
 Ku, Tzuchun Jeffrey: 1004
 Kuhlman, John M.: 1004, 1005
 Kumar, Ajay: 871, 872, 933, 955, 1212, 1250

Kumar, V. K.: 100
 Kural, Murat H.: 593
 Kurland, Richard M.: 372
 Kurtze, W. L.: 619
 Kvaternik, R.: 711

Ladany, I.: 265
 Ladson, Charles L.: 1042
 Lake, L. R.: 1107, 1160
 Lakin, W. D.: 700
 Lallman, Frederick J.: 97, 98
 Lamar, John E.: 978, 1021, 1023, 1024, 1043
 Lamb, Milton: 873, 874, 879, 934, 939
 Lampe, Donald R.: 210, 211, 212
 Lan, C. Edward: 826, 1006, 1007
 Landey, M.: 161
 Landis, H. S.: 342, 395, 457, 458
 Landrum, Emma Jean: 875, 912
 Lange, R.: 1090
 Langford, Berkley A., Jr.: 146
 Lankford, W. F.: 276
 Larabee, E. E.: 511
 Larsen, J. C.: 1084, 1169
 Lassiter, William S.: 1366, 1367, 1369
 Lawing, Pierce L.: 1044, 1054, 1060, 1064, 1350
 Lawrence, David L.: 828
 Lawrence, James D., Jr.: 1162
 Lawrence, Roland W.: 147
 Leatherwood, Jack D.: 494, 495, 533
 Leavitt, Laurence D.: 868
 LeCroy, Stuart R.: 1308
 Lee, E. G. S.: 594
 Lee, Edwin E., Jr.: 970
 Lee, J. D.: 1171
 Lee, Ja H.: 1186, 1213, 1245, 1258
 Lee, Robert B.: 1296, 1297
 Legg, R. L.: 24
 Leiffer, James L.: 1354
 Leighty, B.: 1145
 LeMessunier, R. W.: 1246
 Leng, J.: 899
 Lengsfeld, Byron H., III: 273, 274, 328
 Lester, Harold C.: 549
 Levin, E. R.: 265
 Levine, Joel S.: 295, 1108, 1109, 1110, 1130, 1131, 1132, 1133, 1146, 1149, 1163
 Leybold, H. A.: 39
 Liebowitz, Harold: 373
 Lightner, E. Burton: 7
 Lindberg, Steven E.: 1321
 Linden, K. J.: 266
 Lindenbaum, S. P.: 784
 Lindsay, Victor E. J.: 697
 Lisagor, W. Barry: 437
 Liu, D. H.: 369
 Liu, Grace C.: 770, 774

Livingston, John M.: 1091, 1119, 1120
 Lo, Wayne: 294
 Loendorf, David: 659
 Long, Edward R., Jr.: 338, 387, 390, 402, 419, 420, 459
 Long, Moses J.: 1370, 1377
 Long, S. A. T.: 1397
 Lovelady, Ray W.: 1302
 Lovell, Donald R.: 1038, 1072
 Lovell, William A.: 780, 783, 787, 792
 Lundry, J. L.: 944
 Luther, Michael R.: 200, 201
 Lutze, Frederick H.: 114, 840
 Luu, Thanh Ky: 153
 Lyons, J. R.: 781
 Lyzenga, David R.: 1310

MacConochie, Ian O.: 307, 1246, 1247, 1266
 Mace, James: 936
 MacGillivray, Charles S.: 591
 Maciulaitis, A.: 899
 Mack, Robert J.: 956, 957
 Mackey, George B.: 593
 Mackley, E. A.: 948
 MacNeal, Richard H.: 591
 Maddalon, Dal V.: 771, 772, 773
 Madden, John F.: 11
 Maddrea, G. L., Jr.: 1291
 Maestrello, Lucio: 519, 523, 526, 537
 Magee, C. W.: 265
 Magee, Carl J.: 238, 287
 Magiso, Hans: 696
 Mahesh, J. K.: 109
 Malik, Mujeeb R.: 898
 Mall, Gerald H.: 253, 305
 Manro, Marjorie E.: 1008, 1009, 1010
 Mantay, Wayne R.: 672
 Marcum, Don C., Jr.: 910
 Margason, Richard J.: 1045
 Mark, William D.: 701, 702
 Markham, J. W.: 380
 Markos, Athena T.: 47
 Marlow, M. B.: 728
 Martin, Glenn L.: 780, 783, 792
 Martin, J. H.: 157, 158
 Martin, James A.: 1248, 1270
 Martin, Mary: 66
 Martin, R. M.: 481
 Masek, Robert V.: 709
 Mason, William H.: 875
 Masson, Gerald M.: 156
 Masursky, Harold: 8
 Mathes, J. C.: 1390, 1391, 1392
 Mathis, Joe J., Jr.: 1295, 1296, 1297
 Matthews, Christine G.: 73
 Maughmer, Mark D.: 829, 835

Maurer, H. E.: 221
 Maximovich, M.: 374
 Mayes, William H.: 561
 Mayo, Marna H.: 123
 Mayr, H. G.: 1167
 McCartney, M.: 1396
 McCarty, J. E.: 23
 McCarty, John L.: 564
 McClinton, Charles R.: 935
 McComb, Harvey G., Jr.: 563
 McConnell, Judy: 163
 McCormick, Barnes W.: 827
 McCormick, M. Patrick: 1081, 1082, 1086, 1097, 1111, 1112, 1113, 1119, 1120, 1134,
 1164, 1165, 1171
 McCormick, Royce F.: 254
 McCoy, Daniel E.: 1387
 McCurdy, David A.: 496, 556
 McCutchen, D. K.: 535, 555
 McDaniel, Gary A.: 46
 McDougal, David S.: 1116, 1324
 McElroy, M. B.: 1092
 McGary, Michael C.: 527, 538, 561
 McGehee, C. R.: 703
 McGhee, Robert J.: 979
 McGough, John G.: 159, 179, 202, 206
 McKern, R.: 161
 McKinnon, R. A.: 782
 McKinney, L. Wayne: 980
 McKinney, Marion O.: 981
 McMaster, L. R.: 1112, 1113, 1119
 McMenomy, Christe: 5, 6
 McMillan, Oden J.: 890, 891, 892
 McNamara, James W.: 1355
 Meissner, Frances: 70
 Melfi, Leonard T., Jr.: 1249
 Melson, N. Duane: 992
 Memory, J. D.: 420, 1397
 Menzies, R. T.: 1324
 Mercer, J. E.: 704
 Meredith, Barry D.: 138, 173
 Merilainen, C. A.: 263
 Meyers, James F.: 249
 Michalke, Alfons: 482
 Michel, Ulf: 482
 Middleton, David B.: 37
 Middleton, W. D.: 944
 Migneault, G.: 234
 Mihora, D. J.: 1198, 1239
 Miley, Stan J.: 828
 Miller, A. G.: 592
 Miller, Charles G., III: 1177, 1178
 Miller, David S.: 875, 912, 927
 Miller, G. Kimball, Jr.: 90, 118
 Miller, James B.: 83
 Miller, Matthew D.: 267

Miller, Richard K.: 1194
 Miller, Ronald D.: 636, 637, 638, 639, 640, 641, 642, 643, 644, 650
 Milnes, A. G.: 1267
 Minnis, Patrick: 1334, 1342
 Mirick, P. H.: 708
 Mitchell, John L.: 237
 Mixon, Randolph W.: 85
 Mixson, John S.: 483, 517, 518, 539, 547
 Mock, Willis, Jr.: 316
 Moerder, Daniel D.: 121
 Moen, Gene C.: 813
 Moffett, D.: 297
 Molusis, J. A.: 540, 754
 Monta, William J.: 869, 937
 Monteith, James H.: 304
 Montgomery, Raymond C.: 119, 120, 126
 Montoya, Lawrence: 1069
 Montoya, R. Jorge: 160, 203
 Moore, Frederick L.: 14, 15
 Moore, Thomas C.: 286, 314
 Morello, Samuel A.: 59, 834, 846, 849
 Morgan, Harry L., Jr.: 982, 1046
 Morley, Bruce M.: 1091
 Morris, Charles E. K., Jr.: 769, 770, 775, 776
 Morris, Dana J.: 838
 Morris, Odell A.: 877
 Morris, R. E.: 888
 Morris, S. J.: 797
 Morris, W. Douglas: 1294, 1298, 1325, 1338
 Morrisette, E. L.: 913
 Mosesian, B.: 27
 Moskowitz, Steven M.: 177
 Moss, D. G.: 335
 Moss, J. N.: 1222, 1223, 1250, 1255, 1264, 1279
 Motyka, P.: 161
 Moughon, W. Clayton: 256
 Moul, Thomas M.: 110
 Muehlbauer, J. C.: 784, 797
 Mueller, Arnold W.: 484, 541
 Mueller, James N.: 864
 Mukhopadhyay, Vivekananda: 668, 680, 730
 Munivalli, Shekhar: 299
 Munro, D. H.: 511
 Muraca, Ralph: 1371, 1372
 Murcray, D. G.: 1169
 Murphy, Arthur C.: 687, 738
 Murphy, Patrick C.: 89, 117
 Murri, Daniel G.: 819
 Murrill, R. J.: 708
 Murrow, H. N.: 755
 Murthy, M. V. V.: 339
 Murthy, V. R.: 712
 Myers, Raymond H.: 53, 54
 Myler, T. R.: 16, 17, 18

Nagarkar, Aniruddha P.: 379
 Nagib, H. M.: 894
 Nagy, E. J.: 1404
 Naidu, S. V. N.: 342, 395, 457, 458
 Nastrom, Gregory D.: 139, 204
 Natarajan, Murali: 1096, 1107, 1108, 1114, 1154, 1166
 Nayfeh, Adnan H.: 572
 Nealy, John E.: 1087, 1114
 Nelson, James B.: 341, 448
 Newell, Reginald E.: 1115
 Newman, J. C., Jr.: 343, 344, 345, 396, 397, 398, 399, 424, 425, 426, 460, 461
 Newman, Perry A.: 992
 Newsom, Jerry R.: 668, 673, 674, 680, 681, 682, 715, 716, 729, 730, 731
 Nguyen, Luat T.: 843, 847
 Nicholson, John Y., III: 1107, 1159, 1160, 1161
 Niemann, H. B.: 1160, 1167
 Niiro, T.: 586
 Nill, K. W.: 266
 Nietzsche, F.: 705
 Nolan, Joseph D.: 44
 Noland, Marie S.: 48, 61
 Noonan, Kevin W.: 968, 983
 Noor, Ahmed K.: 563
 Northam, G. Burton: 921, 935, 958
 Novack, Nathan E.: 178
 Nystrom, Donna: 976

 Oakley, John W.: 1355
 Obera, Clifford J.: 854
 Oberholtzer, J. D.: 221
 O'Brien, T. Kevin: 346, 400, 427, 462, 463
 Oderman, W. E.: 221
 Oh, I. H.: 1199
 Ohlhorst, Craig W.: 1320, 1322, 1335
 Oman, R. A.: 899
 Ormsbee, Allen I.: 829, 835
 Orr, Harry D., III: 1083
 Orszag, Steven A.: 889, 900, 901
 Orwoll, Robert A.: 401
 Ostroff, Aaron J.: 140
 Outlaw, R. A.: 1206, 1214, 1242, 1275
 Owen, F. Kevin: 1025
 Owens, John K.: 828

 Padula, S. L.: 486
 Pagel, LaVerne L.: 1064
 Palmer, R. J.: 595
 Palumbo, Daniel L.: 508
 Pao, S. Paul: 542, 543
 Pappa, Richard S.: 611, 625
 Park, A. Colton: 1200
 Park, Jae H.: 1084, 1117, 1137
 Park, K. C.: 624
 Park, Stephen K.: 137, 169, 175, 196, 197
 Parker, James F., Jr.: 104

Parrish, W. J.: 264
 Patterson, B. D.: 276
 Patterson, Edward M.: 1091
 Patterson, James C., Jr.: 1061
 Patterson, John L., Jr.: 558
 Patton, James M., Jr.: 833
 Paulin, Patricia A.: 332
 Paulson, John W., Jr.: 821, 837, 1026
 Payne, M. Carr, Jr.: 525
 Pearsons, Karl S.: 499, 501
 Peddrew, Kathryn H.: 994
 Pelchat, Guy M.: 215
 Pellett, G. L.: 1292, 1293, 1336
 Pepin, T. J.: 1112, 1113, 1119, 1120
 Perry, Boyd, III: 636, 637, 638, 639, 640, 641, 642, 643, 644, 650, 683, 732
 Person, Lee H., Jr.: 59, 94, 848, 855
 Peterson, D. T.: 1214
 Peterson, John B.: 1070
 Peyton, B.: 1090
 Phelps, Henry R.: 402
 Phelps, M. L.: 375
 Phillips, Donald H.: 273, 274, 328, 329
 Phillips, Edward P.: 347, 403
 Phillips, W. Pelham: 1187
 Phillips, William H.: 128, 130
 Piatt, Michael J.: 902
 Pierce, G. Alvin: 1011
 Pinelli, Thomas E.: 1390, 1391, 1392, 1393, 1394, 1398, 1399, 1400, 1401
 Pines, Samuel: 162, 163
 Pinson, L. D.: 628
 Pittman, Jimmy L.: 876
 Pitts, Calvin U.: 836
 Pitts, Felix L.: 148, 235, 236
 Plumer, J. Anderson: 830
 Poe, C. C., Jr.: 348, 464
 Polhamus, Edward C.: 995, 1047, 1048
 Poole, Bordie D., Jr.: 307
 Poole, Lamont R.: 1299, 1301, 1323, 1325, 1338
 Pope, Alan T.: 71
 Post, D.: 385, 413
 Poth, G. E.: 924
 Pototzky, Anthony S.: 682, 731
 Powell, Clemans A.: 480, 485, 490, 496, 556
 Powell, Richard W.: 1251
 Powers, R. W.: 756
 Prasad, B.: 635, 648
 Pratt-Barlow, Charles R.: 688, 739
 Preisser, John S.: 479, 484, 528, 544
 Prewo, K. M.: 376
 Prey, S. W.: 1003
 Price, Douglas B.: 121
 Price, Howard L.: 341, 448, 465, 1247
 Price, Jack E.: 783, 787
 Price, Joseph M.: 1252
 Prior, Edwin J.: 1116

Progar, Donald J.: 352
 Pruett, C. D.: 1226
 Purgold, Gerald C.: 1290, 1314, 1340
 Puster, Richard L.: 684, 733
 Putnam, Lawrence E.: 936

 Quass, B.: 914, 931
 Quinto, P. F.: 837

 Rajala, Sarah A.: 203
 Raju, I. S.: 336, 345, 397, 399, 404, 426, 461
 Ramkumar, R. L.: 377
 Randall, C. C.: 784
 Raney, John P.: 486, 557
 Rao, Dhanvada M.: 1012, 1013, 1049
 Rao, Kodali V.: 528
 Raper, J. L.: 1147
 Rarig, Pamela L.: 1083
 Rassweiler, George G.: 215
 Rawson, R. F.: 221
 Ray, Edward J.: 1042
 Rayborn, Grayson H.: 297, 301, 317
 Re, Richard J.: 925
 Reddy, A. S. S. R.: 100, 111
 Reddy, C. Subba: 1014, 1024
 Reed, Wilmer H., III: 607, 685, 710, 724, 734, 757
 Reeder, R. E.: 266
 Reese, Charles: 378
 Rehder, John J.: 610, 1232, 1247, 1284
 Reichert, R. T.: 903
 Reichle, Henry G., Jr.: 1115, 1142, 1168
 Reichman, Benjamin: 1215, 1216, 1229, 1265, 1276
 Reifsnider, Kenneth L.: 400
 Remsberg, Ellis E.: 1078, 1118, 1170, 1173
 Report and Manuscript Control Office: 1395
 Rhodes, David B.: 311
 Rhodes, Marvin D.: 579, 615, 627, 633, 651, 660
 Ribble, John W.: 596
 Ribner, Herbert S.: 545
 Richards, W. H.: 1362
 Richardson, D. J.: 1084
 Ricketts, Rodney H.: 612, 670, 727, 753
 Ricks, Robert: 696
 Riebe, Gregory D.: 876, 877, 916
 Rieder, P. F.: 335
 Riley, Kathleen M.: 690, 706, 735, 736, 742
 Rind, Emanuel: 252
 Ringermacher, H. I.: 298
 Rinsland, Curtis P.: 1084, 1117, 1137, 1169
 Robinson, James C.: 675, 717, 718, 728, 735
 Robles, Andres: 5, 6
 Roderick, G. L.: 466
 Rodgers, W. G.: 152
 Rogers, James L., Jr.: 669, 686, 691, 736, 743, 758, 759
 Rogers, R. Clayton: 878, 954

Rogowski, Robert S.: 299, 1110, 1315
 Roland, Vince: 72
 Rosen, B. Walter: 379
 Rosen, J. M.: 1119
 Rosenberg, A.: 1152
 Roskam, J.: 105, 831
 Ross, W. D.: 467
 Rothman, L. S.: 1084
 Rouse, D. J.: 1396
 Rouse, Marshall: 629
 Roussos, Louis A.: 539, 546, 547
 Rowe, W. T.: 785
 Rowe, William S.: 737, 747
 Rowland, Carroll W.: 141, 171
 Royster, Dick M.: 468
 Rucker, C. E.: 535, 555
 Rudy, David H.: 915, 959
 Ruedger, W. H.: 149, 154, 164, 174
 Ruhlin, Charles L.: 687, 688, 738, 739
 Rummeler, Donald R.: 353, 469
 Russ, Courtney E., Jr.: 315
 Russell, James M., III: 1099, 1101, 1103, 1117, 1118, 1137, 1170
 Russell, Philip B.: 1091, 1112, 1113, 1119, 1120, 1171
 Russell, R. A.: 42
 Rutishauser, H. J.: 594
 Ryder, James T.: 463

Sabol, Alexander P.: 864
 Sachse, Glen W.: 251, 323
 Sacks, L. J.: 1108
 Saeger, M. L.: 1309, 1311
 Sakata, I. Frank: 587, 779, 786
 Salas, Manuel D.: 542, 1071, 1072
 Samms, Kathy H.: 849
 Sandefur, Paul G., Jr.: 1054, 1060, 1350
 Sandford, Maynard C.: 612, 670, 753
 Sankewitsch, V.: 1406
 Sanlorenzo, E. A.: 904
 Santos, Beatrice: 432
 Sarames, G. N.: 779
 Sarma, Garimella R.: 91, 131
 Satran, Dale R.: 816
 Savage, M.: 1090
 Sawyer, James Wayne: 573, 574, 613
 Sawyer, Lynn M.: 749
 Sawyer, Wallace C.: 874, 934, 937
 Saylor, Mary: 1168
 Schaffner, Philip R.: 222, 228
 Scheidt, Dennis C.: 515
 Scheiman, James: 981, 984, 985, 1027
 Schemensky, Roy T.: 1024
 Schexnayder, Charles J., Jr.: 878
 Schiess, James R.: 73, 1116
 Schlinker, Robert H.: 509
 Schmidt, F. A.: 1214

Schmit, L. A.: 748
 Schoenster, J. A.: 544
 Schroeder, Lyle C.: 192, 237
 Schryer, David R.: 299, 1315
 Schuetz, P. H.: 628
 Schug, J. C.: 273
 Schulte, Robert L.: 362
 Schuszler, A., II: 459
 Schwartz, John W.: 1360
 Schy, Albert A.: 122
 Scribner, Paul C.: 5, 6
 Seals, R. K.: 1169
 Searle, N.: 784
 Sebacher, Daniel I.: 1318, 1337
 See, Michael J.: 101
 Seiler, W.: 1121
 Seiner, John M.: 543, 548, 558
 Seinfeld, John H.: 1085
 Serben, S.: 157, 158
 Sewall, John L.: 608
 Sewall, William G.: 968, 986, 1050
 Shah, Shantilal N.: 55, 56
 Shamroth, Stephen J.: 707
 Shane, Douglas B.: 101
 Shapiro, Gary L.: 1093, 1124
 Shaw, Edwin F.: 1163
 She, C. Y.: 275
 Shearin, John G.: 487
 Shepherd, C. C.: 535, 555
 Shepherd, Kevin P.: 506, 507, 510, 550, 551, 559
 Sherman, Windsor L.: 92
 Shideler, John L.: 667, 689, 740
 Shinn, Judy L.: 1253
 Shipley, S. T.: 1128, 1151, 1152, 1172
 Shipman, Floyd: 74, 75
 Shirk, Michael H.: 727
 Shivakumar, K. N.: 475
 Shore, Charles P.: 741
 Short, J. S.: 433
 Shrout, Barrett L.: 960, 1351
 Shu, Jin-Yea: 1005
 Shumate, M. S.: 1324
 Shutt, Tom J.: 212
 Sibbers, Charles W.: 13
 Siemers, P. M., III: 1226
 Silcox, Richard J.: 549
 Sims, Robert: 1069
 Singh, Jag J.: 253, 276, 297, 300, 305, 316, 317
 Skoumal, D. E.: 597
 Slazak, M.: 539
 Slotboom, D. R.: 500
 Small, William J.: 877, 916, 1270
 Smith, A. C.: 300
 Smith, B. T.: 1182, 1183, 1184, 1227, 1228
 Smith, B. W.: 592

Smith, C. V.: 380
 Smith, Eunice G.: 565
 Smith, G. Louis: 1094, 1122, 1126, 1135, 1136, 1143
 Smith, Kathryn A.: 49
 Smith, Mary Ann H.: 1084, 1117, 1137, 1169
 Smith, Paul M.: 787
 Smith, R. T.: 265
 Smith, Robert E.: 50, 58, 76
 Smith, Rudeen S.: 61
 Smith, T. B.: 157, 158
 Snow, Daniel B.: 799
 Snow, W. L.: 257
 Snyder, W. E.: 149, 174
 Sobieszczanski-Sobieski, Jaroslaw: 669, 690, 691, 713, 726, 742, 743
 Somers, Dan M.: 987, 988, 1051, 1057, 1062, 1073
 Sorem, James, Jr.: 378
 Sorenson, John A.: 832
 South, Jerry C., Jr.: 1035, 1063, 1074
 Spady, Amos A., Jr.: 93
 Spearman, M. Leroy: 798, 808
 Spencer, J. Larry: 182, 238, 287
 Spencer, John H.: 2
 Spencer, N. W.: 1167
 Speray, Don E.: 58, 77, 197
 Spiers, R. B.: 205
 Spillman, J. E.: 467
 Spitzer, Cary R.: 239
 Sprinkle, Danny R.: 259
 Squire, K. R.: 276
 St. Clair, Anne K.: 349, 350, 405, 406, 407, 418, 428, 429, 430, 440, 441, 442, 445, 470
 St. Clair, Terry L.: 349, 350, 351, 352, 401, 406, 407, 418, 428, 429, 430, 431, 441, 442, 445, 446, 471, 472, 473, 474, 1354
 Stacher, G. W.: 357
 Stack, Sharon H.: 938, 961, 962
 Staff of Boeing Aerospace Company: 598, 599
 Staff of Boeing Commercial Airplane Company: 28, 29, 30, 31, 32, 33, 788
 Staff of Douglas Aircraft Company: 34, 35, 789
 Staff of Eaton Corp.: 165
 Staff of Rockwell International Corporation: 905
 Stainback, P. Calvin: 1025
 Stallings, Robert L., Jr.: 865, 879, 939
 Stallman, Steven T.: 137
 Stalnaker, Winnie: 1385
 Stanley, G. M.: 580
 Stanley, William D.: 228
 Stapleton, B. P.: 335
 Starnes, James H., Jr.: 615, 629
 Staton, W. L.: 1293
 Steele, H. M.: 1112
 Steger, Joseph L.: 1015
 Stehlin, P.: 581
 Steinmetz, George G.: 59, 848
 Stephens, A. T.: 115
 Stephens, David G.: 550, 551, 559, 560

Stephenson-Graves, Denise: 1138
 Stevens, Dariene: 1277
 Stewart, Richard W.: 1085
 Stewart, W. F.: 254
 Stickle, Joseph W.: 817, 818
 Stohrer, Freda F.: 1400, 1401
 Stokes, George M.: 384
 Stokes, Jack W., Jr.: 1359
 Stolpestad, J. H.: 357
 Stone, C. R.: 109
 Stone, F. R., Jr.: 784
 Stone, Francis D.: 313
 Stone, R. H.: 381
 Stoops, William E., Jr.: 1354
 Storaasli, Olaf O.: 619, 630, 661, 662, 663
 Storey, R. W.: 1145, 1336
 Stough, H. Paul: 833
 Streett, Craig L.: 989, 1052
 Strikwerda, John C.: 915
 Stronach, C. E.: 276
 Strong, R. B.: 1311
 Stroud, C. W.: 353
 Stroud, W. Jefferson: 568, 575, 576, 577, 615, 631
 Strouhal, George: 1349
 Strozier, J. K.: 1001
 Stubbs, Sandy M.: 564, 565
 Stuckey, Robert N.: 667
 Subramanian, S. V.: 1139, 1201
 Succi, George P.: 511, 512
 Sudhir, C. Mehrotra: 1053
 Suit, William T.: 123
 Sutherland, Louis C.: 513
 Suttles, J. T.: 1139, 1140
 Sutton, Kenneth: 1188, 1202, 1222, 1224
 Swanson, E. E.: 780, 792
 Swanson, R. C.: 940
 Sweet, Jon L.: 219, 237
 Swegle, Allan R.: 697, 698
 Swern, Fred L.: 159, 179, 202, 206
 Swift, Calvin T.: 207, 227, 240, 241
 Swissler, T. J.: 1112, 1113, 1119, 1120, 1171
 Syberg, J.: 790
 Syder, H.: 23
 Sykes, George F.: 432
 Sze, N. D.: 1092

Taback, Israel: 1346
 Talay, Theodore A.: 1299, 1338
 Talcott, Noel A., Jr.: 880, 941, 963, 964
 Tam, C. K. W.: 514
 Tamma, Kumar K.: 692, 744
 Tanimoto, E. Y.: 382
 Tanis, Fred J.: 1310
 Tanna, H. K.: 514
 Tanner, John A.: 564, 565, 566

Taylor, Allan H.: 916, 917
 Taylor, H. A., Jr.: 1160, 1167
 Taylor, Hunter F.: 1387
 Taylor, Larry T.: 405, 440, 442, 445, 470
 Taylor, Lawrence W., Jr.: 110, 124, 125
 Taylor, R. E.: 189
 Teffeteller, S.: 501
 Tenney, Darrel R.: 385, 408, 413, 443
 Tennyson, R. C.: 383
 Teske, Milton E.: 503, 838
 Thames, Frank C.: 973, 992, 1033
 Thau, F. E.: 126
 Thibodeaux, J. J.: 1028
 Thom, R. D.: 263, 264
 Thomas, Carolyn C.: 1189, 1278
 Thomas, James L.: 874, 934
 Thomas, James P.: 1289, 1319
 Thomas, Mitchel E.: 148, 208, 242
 Thomas, R.: 243
 Thomasson, James F.: 372
 Thompson, A. D.: 335
 Thompson, E. R.: 376
 Thomson, Robert G.: 632
 Thornton, Earl A.: 546, 692, 714, 744, 749
 Thornton, H. T., Jr.: 628
 Throckmorton, David A.: 1181, 1254
 Thurston, Gaylen A.: 664
 Tiffany, Sherwood H.: 36, 129
 Tingas, Stephen A.: 1013
 Tisdale, Henry F., Sr.: 853
 Tiwari, S. N.: 954, 1139, 1140, 1201, 1212, 1255, 1279
 Tole, J. R.: 115
 Toll, Thomas A.: 995, 1048
 Tolson, Robert H.: 1123, 1141
 Tommerdahl, J. B.: 1309, 1311
 Tompkins, S. S.: 433
 Toni, Royce A.: 614
 Torrence, Marvin G.: 864, 921
 Totah, Raymond S.: 652, 1268
 Townsend, James C.: 875, 881, 965
 Townsend, Lawrence W.: 476, 1179, 1220, 1256, 1280, 1281
 Trexler, Carl A.: 921, 935
 Tripp, John S.: 79, 255
 Trivedi, Kishor S.: 166
 Trolinger, J. D.: 824
 Tsach, U.: 635, 648
 Tulppo, John S.: 63
 Turkel, Eli: 526
 Turner, L.: 790
 Turner, R. E.: 1157, 1173
 Tuttle, Marie H.: 771, 772, 773, 990

Unnam, Jalaiah: 342, 395, 408, 443, 457, 458
Unruh, James F.: 515
Upchurch, Billy T.: 301, 330, 332
Urash, Richard G.: 19
Usry, Jimmy W.: 1294, 1298, 1300, 1301, 1325, 1338

Vahey, David W.: 213
Vaicaitis, R.: 539
Vaidya, P. G.: 500
Vaidyanathan, Anand R.: 1011
Vallas, Maria: 623, 678, 679, 725
Van Cleave, R. R.: 27
Van Dam, Cornelis P.: 836, 850
Vandervelde, Wallace E.: 119
Vann, David S.: 254
Varanasi, Murali R.: 106
Vasquez, Peter: 684, 733
Vaughan, Desmond H.: 600
Venable, D. D.: 1323
Venkataraman, S. K.: 904
Ver, Istvan L.: 561
Vernon, Robert M.: 601
Vidal, James B.: 630
Vogler, William A.: 566
Voigt, S. J.: 78
Von Zahn, U.: 1167

Walberg, Gerald D.: 1257, 1282
Wald, G. G.: 791
Waldeck, Gary C.: 1378
Walen, D. B.: 335
Walker, G. H.: 1230, 1235
Walkley, Kenneth B.: 780, 783, 792
Wall, Stephen D.: 5, 6
Wallace, John W.: 1302
Waller, Marvin C.: 94
Wallio, H. Andrew: 1142
Wallsom, Richard E.: 622
Walsh, Michael J.: 918
Walton, W. C., Jr.: 760
Walz, J. E.: 610
Ware, C. F.: 160
Washburn, G. Fred: 783, 787
Waters, Mark H.: 832
Waters, William Allen, Jr.: 574, 602
Watkins, Vernon E., Jr.: 1354
Watson, Judith J.: 670, 753, 761
Watson, Willie R.: 488
Weaver, Willard R.: 1213, 1245, 1258
Weeks, W. F.: 228
Wei, Fu Shang: 585
Weidner, Elizabeth H.: 929, 942
Weidner, John P.: 1270
Weilmuenster, Kenneth James: 1212, 1217, 1259

Weinstein, Irving: 671
 Weinstein, Leonard M.: 909, 911, 914, 919, 931, 943, 1225
 Weislogel, G. S.: 127
 Weisshaar, Terrence A.: 727
 Weissman, David E.: 229, 231
 Weller, Tanchum: 646
 Wentz, Frank J.: 191, 192, 233
 Wentz, W. H., Jr.: 1016
 Wereta, A.: 374
 Wetzstein, H.: 899
 Whetstone, W. D.: 728
 Whitcomb, John D.: 354, 355, 409, 410, 434, 435
 White, Charles W.: 603
 White, Ellis J.: 567
 White, Frederick A.: 317
 White, J. H.: 1309, 1311
 White, S. N.: 1017
 White, William F.: 334
 White, William L.: 814
 Whitlock, Charles H.: 1294, 1298, 1300, 1301, 1325, 1338
 Wieting, Allan R.: 692, 714, 744, 750
 Wigley, D. A.: 1018, 1054, 1350
 Wilhite, Alan W.: 1190, 1260, 1283, 1284
 Wilkerson, T. A.: 1095
 Wilkerson, T. D.: 1152
 Wilkins, Judd R.: 1339, 1341
 Wilkinson, W.: 919
 Williams, B. S.: 293
 Williams, Jerry G.: 578, 579, 615, 627, 633, 651
 Williams, Louis J.: 793, 799, 809, 810, 811, 812
 Williams, M.: 831
 Williams, M. H.: 722
 Williams, M. Susan: 616
 Willis, Conrad M.: 489
 Willshire, Kelli F.: 490
 Willshire, William L., Jr.: 497, 498, 552
 Wilmoth, R. G.: 928
 Wilson, Jackson W.: 5, 6
 Wilson, John W.: 1218, 1219, 1220, 1221, 1244, 1261
 Wilson, R. J.: 843
 Winfree, William P.: 331
 Winston, Matthew M.: 794, 800
 Witcofski, Robert D.: 777, 801, 802
 Witkin, Andrew P.: 107
 Witte, William G., Jr.: 1294, 1298, 1301, 1325, 1338
 Wolf, S. W. D.: 1019
 Wood, Darrell A.: 15
 Wood, E. R.: 756
 Wood, George M., Jr.: 297, 301, 317, 330, 332
 Wood, Richard M.: 966
 Wood, William H.: 1060
 Woodbury, Gerard E.: 1078, 1143
 Woods, David C.: 1097, 1119, 1144, 1337
 Woods, William C.: 272, 1240
 Woodward, F. A.: 906

Woolley, Charles T.: 84, 99
 Wornom, S. F.: 1075
 Wright, Howard T.: 12
 Wright, R. S.: 1309
 Wright, Robert E., Jr.: 302
 Wright, Robert L.: 1180
 Wurster, K. E.: 1234, 1262
 Wykes, D. H.: 364
 Wynne, Eleanor C.: 693, 745

 Xu, Y. J.: 1244

 Yager, Thomas J.: 567, 634, 665
 Yates, E. Carson, Jr.: 693, 745
 Yates, John E.: 516
 Yeager, William T., Jr.: 672, 708
 Yenni, K. R.: 190
 Yin Xieyuan: 774
 Yip, Long P.: 819, 847, 854
 Yost, W. T.: 277
 Young, D.: 1159, 1160
 Young, Lock R.: 215
 Young, Philip R.: 356, 477
 Young, W. Robert: 185
 Young, Warren H., Jr.: 694, 746
 Youngblood, James W.: 1285
 Youngbluth, O.: 1145
 Yu, James C.: 491, 548, 553
 Yue, Glenn K.: 300, 1082

 Zaepfel, P.: 244
 Zeiders, G. W.: 899
 Zimbelman, H. F.: 1191
 Zimmer, J. A.: 511
 Zoby, E. V.: 1222, 1223, 1263, 1264
 Zorumski, W. E.: 486
 Zuckerwar, Allan J.: 258, 259, 303, 306, 333

SUBJECT CATEGORY INDEX

AERONAUTICS

Category 01: Aeronautics (General)

21, 22, 133, 764, 765, 766, 767, 774, 779, 789, 792, 793, 795, 798, 799, 816, 819, 829, 972, 1042

Category 02: Aerodynamics

34, 163, 612, 614, 638, 670, 672, 685, 694, 707, 708, 710, 722, 724, 734, 737, 746, 768, 776, 785, 796, 814, 821, 826, 828, 831, 833, 835, 837, 838, 856, 857, 858, 859, 861, 863, 865, 866, 867, 868, 869, 871, 873, 874, 875, 876, 877, 879, 882, 884, 885, 886, 887, 890, 891, 892, 893, 896, 903, 905, 906, 907, 910, 912, 916, 920, 922, 924, 925, 927, 930, 932, 934, 936, 937, 939, 967, 968, 969, 970, 978, 979, 980, 982, 983, 985, 987, 988, 989, 991, 993, 996, 997, 1001, 1004, 1005, 1006, 1007, 1008, 1009, 1010, 1011, 1012, 1013, 1014, 1016, 1017, 1020, 1021, 1022, 1023, 1024, 1026, 1030, 1035, 1037, 1043, 1045, 1049, 1051, 1052, 1053, 1055, 1057, 1174, 1178, 1259, 1351

Category 03: Air Transportation and Safety

45, 47, 51, 127, 588, 762, 778, 794, 800, 813, 817, 818, 820, 822, 830, 832, 834, 842, 849, 1364, 1365

Category 04: Aircraft Communications and Navigation

44, 104, 130, 136, 143, 157, 158, 161, 164, 334, 335, 845

Category 05: Aircraft Design, Testing and Performance

23, 28, 29, 30, 31, 32, 33, 35, 37, 95, 110, 565, 594, 616, 637, 639, 640, 644, 676, 677, 687, 688, 691, 701, 702, 703, 723, 738, 739, 743, 769, 770, 771, 772, 773, 775, 780, 781, 782, 783, 784, 786, 787, 788, 827, 844, 847, 880, 938, 941, 995, 1032, 1034, 1046, 1048, 1064, 1380, 1403, 1405, 1406

Category 06: Aircraft Instrumentation

59, 88, 91, 140, 190, 195, 199, 208, 825, 846, 848

Category 07: Aircraft Propulsion and Power

97, 98, 151, 790, 797, 872, 888, 904, 921, 926, 935, 942

Category 08: Aircraft Stability and Control

81, 89, 90, 92, 101, 105, 108, 113, 117, 118, 121, 122, 123, 162, 182, 287, 567, 607, 636, 641, 642, 643, 699, 752, 815, 836, 839, 840, 841, 843, 850, 852, 853

Category 09: Research and Support Facilities (Air)

160, 178, 248, 255, 301, 634, 751, 864, 883, 902, 974, 975, 976, 981, 984, 986, 990, 994, 998, 1002, 1003, 1019, 1025, 1027, 1028, 1047, 1050, 1056, 1361, 1362

ASTRONAUTICS

Category 12: Astronautics (General)

114, 1359

Category 13: Astrodynamics

1231

Category 15: Launch Vehicles and Space Vehicles

7, 19, 40, 41, 112, 124, 602, 1076, 1187, 1193, 1199, 1248, 1262, 1269, 1270

Category 16: Space Transportation

9, 606, 1185, 1207, 1211, 1232, 1246, 1247, 1249, 1257

Category 17: Spacecraft Communications, Command and Tracking

181, 183, 184, 185, 205, 572, 1238

Category 18: Spacecraft Design, Testing and Performance

100, 103, 111, 119, 259, 590, 591, 603, 625, 666, 667, 689, 709, 720, 740, 1175, 1176, 1180, 1190, 1191, 1194, 1200, 1226, 1234, 1236, 1243, 1251, 1252, 1254, 1349, 1368, 1370

Category 19: Spacecraft Instrumentation

61, 149, 154, 174, 1363

Category 20: Spacecraft Propulsion and Power

1077

CHEMISTRY AND MATERIALS

Category 23: Chemistry and Materials (General)

356, 387, 390, 419

Category 24: Composite Materials

24, 25, 26, 27, 42, 336, 337, 340, 342, 346, 353, 354, 355, 362, 364, 365, 366, 367, 368, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 385, 386, 388, 395, 400, 402, 403, 404, 409, 410, 412, 413, 414, 415, 416, 417, 420, 421, 427, 433, 434, 444, 579, 592, 595, 615, 627, 629, 1346, 1347

Category 25: Inorganic and Physical Chemistry

273, 274, 363, 878, 1397

Category 26: Metallic Materials

357, 408, 791, 1018, 1054, 1206, 1214, 1242, 1350, 1386

Category 27: Nonmetallic Materials

188, 189, 338, 341, 349, 350, 351, 352, 358, 384, 391, 392, 393, 401, 405, 406,
407, 411, 418, 422, 423, 428, 429, 430, 431, 432, 445, 446, 684, 733

Category 28: Propellants and Fuels

777, 801, 802

ENGINEERING

Category 31: Engineering (General)

84, 583

Category 32: Communications

142, 145, 146, 176, 177, 215, 306, 604, 1239

Category 33: Electronics and Electrical Engineering

83, 147, 156, 165, 202, 260, 1145, 1198

Category 34: Fluid Mechanics and Heat Transfer

3, 491, 630, 671, 675, 692, 717, 718, 728, 735, 741, 744, 860, 862, 870, 889,
894, 895, 897, 898, 900, 901, 908, 909, 911, 913, 914, 915, 918, 919, 923, 928,
929, 931, 933, 940, 943, 971, 977, 992, 999, 1000, 1031, 1039, 1041, 1044, 1177,
1181, 1188, 1196, 1201, 1202, 1212, 1217, 1222, 1223, 1224, 1225, 1237, 1240,
1241, 1250, 1253, 1263, 1264, 1388

Category 35: Instrumentation and Photography

137, 167, 169, 170, 172, 175, 197, 200, 203, 214, 245, 246, 247, 249, 250, 252,
253, 254, 256, 257, 258, 261, 263, 264, 269, 272, 275, 284, 286, 294, 296, 297,
302, 303, 824, 1083, 1102, 1111, 1119, 1120, 1195, 1302

Category 36: Lasers and Masers

141, 171, 262, 265, 266, 267, 288, 318, 899, 1095, 1203, 1208, 1209, 1210, 1213,
1233, 1245, 1258, 1261, 1360

Category 37: Mechanical Engineering

596, 601, 654, 1348, 1379

Category 39: Structural Mechanics

36, 109, 120, 126, 339, 343, 344, 345, 347, 348, 359, 360, 361, 369, 389, 394,
396, 397, 398, 399, 424, 425, 426, 435, 495, 535, 562, 563, 564, 566, 568, 569,
570, 573, 574, 575, 576, 577, 578, 580, 581, 584, 585, 586, 587, 589, 593, 597,
598, 599, 600, 605, 608, 610, 613, 617, 618, 620, 621, 622, 623, 624, 626, 628,
631, 632, 633, 635, 653, 655, 673, 674, 678, 680, 681, 682, 683, 690, 693, 695,
696, 697, 698, 704, 706, 711, 712, 713, 714, 715, 716, 719, 721, 726, 727, 729,
730, 731, 732, 742, 745, 917, 1371, 1372, 1404

GEOSCIENCES

Category 42: Geosciences (General)

1087, 1097, 1334

Category 43: Earth Resources

168, 180, 191, 192, 194, 1093, 1124, 1287, 1294, 1298, 1299, 1310, 1318

Category 44: Energy Production and Conversion

705, 1182, 1183, 1184, 1204, 1215, 1216, 1227, 1228, 1229, 1235, 1343, 1345

Category 45: Environment Pollution

187, 207, 251, 299, 300, 490, 493, 510, 525, 1078, 1090, 1116, 1133, 1290, 1291,
1292, 1293, 1295, 1296, 1297, 1300, 1301, 1303, 1304, 1305, 1306, 1307, 1308,
1309, 1311, 1312, 1313, 1314, 1315, 1319, 1320, 1321, 1322, 1325, 1336, 1337,
1338, 1340, 1387

Category 46: Geophysics

10, 295, 1081, 1082, 1085, 1086, 1091, 1092, 1099, 1100, 1101, 1103, 1105, 1106,
1107, 1108, 1109, 1110, 1112, 1113, 1117, 1118, 1121, 1127, 1130, 1131, 1132,
1134, 1137, 1144, 1288, 1317

Category 47: Meteorology and Climatology

132, 139, 148, 201, 204, 1079, 1080, 1088, 1094, 1096, 1104, 1114, 1115, 1122,
1123, 1125, 1126, 1128, 1129, 1135, 1136, 1138, 1139, 1140, 1141, 1142, 1143,
1255

Category 48: Oceanography

150, 186, 193, 198, 285, 1230, 1289, 1316, 1323, 1326, 1327, 1328, 1329, 1330,
1331, 1332, 1333, 1335

LIFE SCIENCES

Category 51: Life Sciences (General)

1341

Category 52: Aerospace Medicine

1219, 1396

Category 53: Behavioral Sciences

85, 93, 94, 115, 116, 492, 494, 530, 533

Category 54: Man/System Technology and Life Support

64, 102

MATHEMATICAL AND COMPUTER SCIENCES

Category 59: Mathematical and Computer Sciences (General)

80, 159, 166, 179, 206, 1089, 1098

Category 60: Computer Operations and Hardware

138, 152, 173

Category 61: Computer Programming and Software

16, 17, 18, 46, 48, 49, 57, 60, 82, 96, 99, 155, 619, 669, 679, 686, 725, 736,
823, 881, 1189, 1286

Category 62: Computer Systems

134, 571, 609, 1344

Category 63: Cybernetics

79, 107, 668

Category 64: Numerical Analysis

43, 50, 55, 56, 58, 582, 611, 700, 973, 1015, 1033, 1038, 1205

Category 65: Statistics and Probability

52, 53, 54, 528, 1029

Category 66: Systems Analysis

86, 87, 125

PHYSICS

Category 71: Acoustics

268, 270, 271, 279, 280, 281, 282, 283, 289, 290, 291, 292, 298, 304, 478, 479,
480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 496, 497, 498, 499, 500, 501,
502, 503, 504, 505, 506, 507, 508, 509, 511, 512, 513, 514, 515, 516, 517, 518,
519, 520, 521, 522, 523, 524, 526, 527, 529, 531, 532, 534, 536, 537, 538, 539,
540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 1036, 1040,
1260, 1366, 1367, 1369

Category 72: Atomic and Molecular Physics

196, 293, 305, 1084, 1218

Category 73: Nuclear and High-Energy Physics

1179, 1220, 1221, 1244, 1256

Category 74: Optics

106, 135, 153

Category 75: Plasma Physics

1186

Category 76: Solid-State Physics

144, 276, 277, 278

SOCIAL SCIENCES

Category 80: Social Sciences (General)

2

Category 81: Administration and Management

13

Category 82: Documentation and Information Science

1390, 1391, 1392, 1393, 1394, 1395, 1398, 1399, 1400, 1401

Category 83: Economics and Cost Analysis

14, 15

Category 85: Urban Technology and Transportation

1324

Category 91: Lunar and Planetary Exploration

5, 6, 8, 1192, 1197

GENERAL

Category 99: General

1

RTOP INDEX

RTOP 023-10-01

968

RTOP 023-22-00

1386

RTOP 141-20-10

253

RTOP 141-20-21

1396

RTOP 145-20-10

1290

RTOP 146-10-03

1122

RTOP 146-10-06

1079, 1088, 1094, 1104, 1126, 1134, 1135, 1138, 1139, 1140, 1143, 1334

RTOP 146-20-01

1085, 1306

RTOP 146-20-08

1100

RTOP 146-20-10

295, 299, 1078, 1083, 1109, 1110, 1116, 1121, 1127, 1130, 1131, 1132, 1142, 1291,
1295, 1296, 1297, 1307, 1309, 1311, 1314, 1315, 1324

RTOP 146-20-14

1317

RTOP 146-20-31

1115

RTOP 146-30-03

1095, 1128

RTOP 146-30-34

1320

RTOP 146-40-01

1106, 1107

RTOP 146-40-06

186, 191, 192

RTOP 146-40-13

167, 168, 180, 187, 194, 198, 207, 1335

RTOP 146-40-15

193, 1287, 1289, 1299, 1301, 1302, 1310, 1313, 1316, 1322, 1323, 1326, 1327, 1328,
1329, 1330, 1331, 1332, 1333

RTOP 146-40-45

1325

RTOP 146-50-02

1098

RTOP 146-60-01

1080, 1105, 1123, 1141

RTOP 146-60-03

10, 1091

RTOP 147-30-01

274, 1092, 1114, 1288

RTOP 147-40-01

141, 171, 1363

RTOP 179-30-23

1214

RTOP 179-80-10

188, 189

RTOP 198-30-01

1096

RTOP 198-30-02

1108, 1133

RTOP 199-20-76

1179, 1219, 1220, 1221, 1256

RTOP 199-30-36

1318, 1321

RTOP 307-01-02

1312

RTOP 307-91-00

300

RTOP 340-00-00

2

RTOP 490-00-23

19

RTOP 490-02-02

16, 17, 18

RTOP 505-01-13

971

RTOP 505-02-13

615

RTOP 505-02-23

713

RTOP 505-04-13

928

RTOP 505-06-13

915

RTOP 505-06-43

1025

RTOP 505-06-53

1014

RTOP 505-07-06

268

RTOP 505-09-23

517

RTOP 505-10-23

712

RTOP 505-10-39

1403, 1405, 1406

RTOP 505-11-13

912, 1027

RTOP 505-11-33

1022

RTOP 505-31-13

897, 898, 989, 992, 1015, 1033, 1035, 1044, 1052

RTOP 505-31-23

272, 504, 520, 522, 860, 862, 883, 889, 893, 894, 901, 902, 908, 909, 911, 913,
914, 918, 919, 923, 931, 943

RTOP 505-31-31

1038

RTOP 505-31-33

967, 972, 973, 979, 983, 985, 986, 987, 988, 993, 1016, 1039, 1050, 1051

RTOP 505-31-43

875, 881, 882, 927, 978, 981, 984, 996, 997, 1001, 1004, 1005, 1006, 1007, 1012,
1013, 1020, 1021, 1023, 1036, 1037, 1043, 1049

RTOP 505-31-53

248, 249, 252, 254, 269, 977, 990, 991, 998, 1002, 1003, 1018, 1019, 1028, 1031,
1041, 1047, 1048, 1054, 1350

RTOP 505-31-63

245, 255, 256, 261, 286, 974, 975, 976, 980, 1053, 1362, 1366, 1367, 1369

RTOP 505-31-70

583, 777, 801, 802

RTOP 505-31-73

870, 876, 877, 880, 888, 905, 910, 916, 917, 938, 941

RTOP 505-31-83

43, 50, 55, 56, 57, 58

RTOP 505-32-03

199, 258, 303, 479, 482, 484, 486, 487, 488, 491, 497, 498, 500, 503, 505, 508,
513, 514, 519, 523, 526, 528, 532, 534, 536, 537, 541, 542, 543, 544, 545, 548,
549, 552, 553

RTOP 505-32-13

936, 940, 970, 994, 1029

RTOP 505-32-93

864, 871, 872, 878, 895, 904, 921, 929, 933, 935, 942

RTOP 505-33-23

279, 280, 281, 289, 290, 291, 292, 298, 301, 343, 344, 345, 353, 367, 390, 396,
424, 425, 426

RTOP 505-33-33

276, 297, 337, 339, 341, 348, 349, 350, 351, 352, 356, 362, 265, 366, 369, 370,
371, 374, 375, 378, 381, 382, 383, 384, 388, 389, 391, 392, 393, 401, 405, 406,
407, 414, 415, 416, 417, 418, 422, 423, 428, 429, 430, 431, 568, 575, 579, 587,
592, 595, 631, 633, 1397

RTOP 505-33-43

270, 271, 277

RTOP 505-33-53

278, 282, 283, 483, 489, 502, 515, 518, 529, 538, 539, 546, 547, 607, 614, 626,
632, 676, 677, 682, 685, 687, 693, 699, 703, 705, 710, 719, 722, 723, 724, 731,
734, 737, 738, 745, 1034

RTOP 505-33-63

619, 627, 629, 668, 669, 673, 674, 679, 680, 681, 686, 690, 691, 704, 706, 715,
716, 725, 726, 729, 730, 732, 736, 742, 743

RTOP 505-33-73

584

RTOP 505-34-13

133, 142, 145, 146, 161, 164, 176

RTOP 505-34-23

5, 6, 178, 203

RTOP 505-34-28

195

RTOP 505-34-33

36, 79, 81, 82, 89, 90, 95, 96, 97, 98, 109, 113, 114, 117, 118, 121, 122, 125,
140, 163

RTOP 505-34-43

156, 159, 166, 179, 182, 202, 287

RTOP 505-35-13

478, 480, 485, 490, 492, 493, 494, 496, 499, 501, 510, 525, 530, 531, 533, 540,
550, 551

RTOP 505-35-23

85, 93, 106, 115, 116

RTOP 505-35-33

53, 54

RTOP 505-35-53

527

RTOP 505-36-13

275

RTOP 505-41-13

110, 816, 827, 828, 833, 1364, 1365

RTOP 505-41-33

562, 616, 620

RTOP 505-41-43

481, 511, 512, 524

RTOP 505-41-63

134, 190

RTOP 505-41-73

88, 91, 101, 104, 105, 108, 127

RTOP 505-41-83

823, 829, 831, 836, 838, 850

RTOP 505-42-13

421, 509, 516, 521, 672, 694, 696, 700, 707, 708, 711, 746

RTOP 505-42-23

824, 869, 1011, 1030, 1040

RTOP 505-42-39

1404

RTOP 505-43-13

814, 815, 819, 839, 840, 841, 843, 847

RTOP 505-43-23

821, 837, 856, 857, 858, 859, 861, 865, 866, 867, 868, 873, 874, 879, 890, 891, 892, 896, 903, 906, 907, 920, 922, 924, 925, 930, 932, 934, 937, 939, 969, 1017, 1026, 1045

RTOP 505-43-33

727, 784, 884, 885, 886, 887, 995

RTOP 505-43-53

762

RTOP 505-44-13

132, 148, 208, 820, 830

RTOP 505-44-17

842

RTOP 505-44-23

92, 817, 818

RTOP 505-44-33

564, 565, 566, 567, 582, 588, 594, 634

RTOP 505-53-06

1024

RTOP 505-53-33

667

RTOP 506-15-13

1251

RTOP 506-17-13

1194

RTOP 506-17-23

397, 403, 409

RTOP 506-18-13

264

RTOP 506-26-23

1222, 1223

RTOP 506-33-63

683

RTOP 506-45-63

175

RTOP 506-51-13

1188, 1190, 1196, 1217, 1225, 1234, 1240, 1246, 1247, 1259, 1260, 1262

RTOP 506-51-23

246, 247, 250, 1177, 1178, 1201, 1202, 1205, 1212, 1224, 1250, 1253, 1255, 1263, 1264

RTOP 506-51-33

1181, 1192, 1193, 1195, 1197, 1199, 1226, 1231, 1241, 1243, 1252, 1254

RTOP 506-52-33

1292

RTOP 506-53-23

273, 336, 338, 340, 342, 346, 354, 355, 358, 359, 360, 361, 364, 368, 372, 373, 376, 377, 379, 380, 385, 386, 387, 395, 402, 410, 412, 413, 419, 420, 432, 433, 1218, 1244

RTOP 506-53-33

296, 302, 408, 535, 589, 598, 599, 602, 689, 695

RTOP 506-53-43

570, 572, 590, 591, 593, 596, 600, 601, 604, 605, 610, 617, 618, 622, 1359

RTOP 506-53-53

3, 394, 398, 399, 400, 404, 427, 434, 563, 569, 573, 576, 577, 580, 581, 630, 675, 714, 717, 718, 720, 721, 728, 735, 741, 744

RTOP 506-53-63

126, 585, 603, 608, 611, 625, 628, 671, 684, 692, 698

RTOP 506-53-73

697, 709, 733, 740

RTOP 506-54-13

80, 107

RTOP 506-54-23

83, 84

RTOP 506-54-63

135, 260, 265

RTOP 506-54-73

86, 87, 100

RTOP 506-54-83

99

RTOP 506-54-93

7, 103, 111, 119, 120

RTOP 506-55-13

1176, 1182, 1183, 1184, 1186, 1203, 1204, 1208, 1209, 1210, 1211, 1213, 1215, 1216,
1227, 1228, 1229, 1233, 1245, 1258, 1261

RTOP 506-55-43

1206, 1230, 1235, 1242

RTOP 506-61-33

147, 165, 266, 267, 285, 288, 293, 294, 1093, 1102, 1124

RTOP 506-61-43

46, 48, 49, 153, 170, 263

RTOP 506-61-53

137, 138, 169, 173, 174, 196, 197, 251, 262, 1090, 1360

RTOP 506-61-63

172

RTOP 506-62-02

181, 183, 184, 185, 205

RTOP 506-62-43

14, 15, 40, 41, 42, 112, 123, 124, 177, 1076, 1175, 1198, 1207, 1238, 1239

RTOP 506-63-13

606, 621, 623, 1174, 1185, 1187, 1371, 1372

RTOP 506-63-23

1232

RTOP 506-89-01

257, 259, 347, 495, 574, 578, 624, 678, 1349

RTOP 510-54-13

571, 609

RTOP 512-52-03

151

RTOP 514-55-03

900

RTOP 516-53-03

157, 158, 206

RTOP 516-57-03

835

RTOP 524-71-03

586, 597

RTOP 524-71-13

613

RTOP 530-01-13

769, 770, 775, 783, 793, 799, 826, 844

RTOP 530-03-13

764, 765, 766, 767, 768, 771, 772, 773, 798, 899, 926

RTOP 530-04-03

776

RTOP 530-04-13

774, 778, 781, 786, 787, 794, 796, 797, 800

RTOP 533-01-13

357, 363, 411, 666, 688, 701, 702, 739

RTOP 533-01-43

779, 780, 782, 785, 788, 790, 791, 792, 795, 863

RTOP 534-01-13

139, 204, 789, 999, 1000

RTOP 534-02-13

21, 22, 28, 29, 30, 31, 32, 33, 34, 35, 37, 612, 670, 982, 1032, 1042, 1046

RTOP 534-03-13

23, 24, 25, 26, 27

RTOP 534-04-13

45, 47, 51, 59, 94, 102, 136, 143, 152, 160, 162, 335, 813, 822, 825, 832, 834,
845, 846, 848, 849

RTOP 534-04-62

334

RTOP 540-01-13

1191

RTOP 540-02-13

1180, 1189, 1236, 1237

RTOP 540-03-13

1248, 1257

RTOP 541-01-13

149, 154

RTOP 542-01-13

1077, 1200

RTOP 542-03-30

144

RTOP 542-04-13

1361, 1370

RTOP 543-01-04

1368

RTOP 618-22-31

1089

RTOP 619-12-01

200, 201

RTOP 619-12-20

1125, 1129

RTOP 619-12-30

1086, 1136, 1286

RTOP 620-12-00

155

RTOP 620-14-00

1084, 1087, 1117, 1137

RTOP 637-01-03

150

RTOP 665-10-40

1081, 1099, 1101, 1103, 1112, 1118, 1119, 1120

RTOP 665-40-40

1082, 1097, 1111, 1113, 1145

RTOP 677-22-24

1319

RTOP 691-09-02

1294, 1298, 1300, 1303, 1304, 1305, 1308, 1338

RTOP 743-01-12

1008, 1009, 1010

RTOP 776-31-41

506, 507

RTOP 815-00-00

8

224

RTOP 906-75-26

1249

RTOP 936-34-00

9

RTOP 989-15-20

1144, 1293, 1336, 1337

RTOP 992-02-00

13

RTOP 992-16-04

52

RTOP 992-16-05

44

RTOP 992-18-00

1347

RTOP 992-18-01

1348

RTOP 992-19-00

284

RTOP 992-24-01

1343, 1345

TECH BRIEF CATEGORY INDEX

Category: Electronic Components and Circuits

63, 438, 1267, 1378, 1402

Category: Electronic Systems

210, 211, 212, 213

Category: Fabrication Technology

436, 645, 649, 1353, 1376

Category: Life Sciences

311, 1339

Category: Machinery

128, 309, 652, 1268, 1373, 1375, 1377

Category: Materials

440, 441, 442, 443, 1265, 1352, 1354, 1374

Category: Mathematics and Information Sciences

62, 129

Category: Mechanics

11, 209, 308, 312, 313, 314, 316, 317, 437, 439, 646, 647, 648, 650, 651, 747, 748, 749, 750, 851, 944, 1058, 1059, 1060, 1061, 1062, 1063, 1266, 1355

Category: Physical Sciences

307, 310, 315

| | | | | | |
|--|--|-----------------------------|---|---|--|
| 1. Report No. NASA TM-83270 | | 2. Government Accession No. | | 3. Recipient's Catalog No. | |
| 4. Title and Subtitle SCIENTIFIC AND TECHNICAL INFORMATION OUTPUT OF THE LANGLEY RESEARCH CENTER FOR CALENDAR YEAR 1981 | | | | 5. Report Date June 1982 | |
| | | | | 6. Performing Organization Code | |
| 7. Author(s) Compiled by Report and Manuscript Control Office, Research Information and Applications Division | | | | 8. Performing Organization Report No. | |
| | | | | 10. Work Unit No. | |
| 9. Performing Organization Name and Address NASA Langley Research Center Hampton, VA 23665 | | | | 11. Contract or Grant No. | |
| | | | | 13. Type of Report and Period Covered Technical Memorandum | |
| 12. Sponsoring Agency Name and Address National Aeronautics and Space Administration Washington, DC 20546 | | | | 14. Sponsoring Agency Code | |
| | | | | | |
| 15. Supplementary Notes Highlights of the major research accomplishments and applications made at the Langley Research Center during the past year are included in NASA TM-83221 entitled "Research and Technology - 1981 Annual Report of the Langley Research Center." | | | | | |
| 16. Abstract This document is a compilation of the scientific and technical information that the Langley Research Center has produced during the calendar year 1981. Included are citations for Formal Reports, Quick-Release Technical Memorandums, Contractor Reports, Journal Articles and Periodical Literature, Meeting/Conference Papers, Computer Programs, Tech Briefs, Patents, and Oral Presentations to Conferences/Workshops. | | | | | |
| 17. Key Words (Suggested by Author(s)) Bibliographies Scientific and technical information Documentation Indexes | | | 18. Distribution Statement Unclassified - Unlimited Subject Category 82 | | |
| 19. Security Classif. (of this report) Unclassified | 20. Security Classif. (of this page) Unclassified | 21. No. of Pages 236 | 22. Price A11 | | |

National Aeronautics and
Space Administration

Washington, D.C.
20546

Official Business
Penalty for Private Use, \$300

SPECIAL FOURTH CLASS MAIL
BOOK

Postage and Fees Paid
National Aeronautics and
Space Administration
NASA-451



3 1176 00506 1214

NASA

POSTMASTER: If Undeliverable (Section 158
Postal Manual) Do Not Return
